

Journal of Mycology

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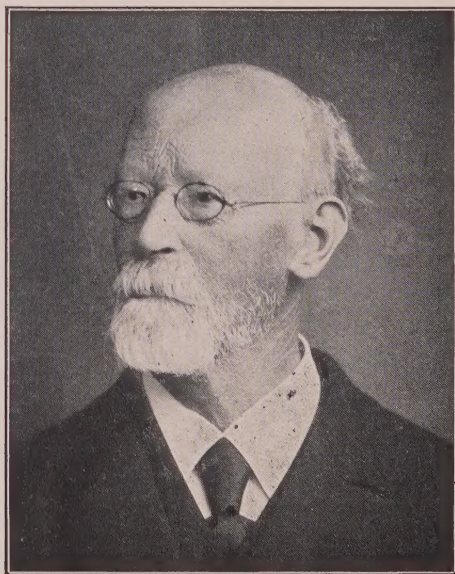
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THE GENUS GIBELLULA CAVARA.

A. P. MORGAN.

In *Michelia* I, 83, Saccardo described a *Hyphomyces*, which he named *Corethropsis pulchra*, stating that it grows on dead insects and their ISARIA. In his *Mycologie Lombarde* CAVARA takes the view, if I may judge from the brief exposition in *Sylloge* XI, 643, that the *Isaria* and the *Corethropsis* are to be taken together as one plant; upon this he founds his genus *Gibellula*. Saccardo appears to concede this view to be correct. Then it is also very probable that *Corethropsis australis* Speg. is simply the sporiferous hyphae of *Isaria arachnophila*; this is the inference we would make from the observation of Oudemans concerning the latter species, quoted *Sylloge* IV, 587. Should the type species, *Corethropsis paradoxa* Corda, turn out to be a similar organism, CAVARA's genus will be canceled and *Corethropsis* will take its place among the *Hyalostilbeae*. Bonorden's figure labeled *Stachylidium paradoxon* certainly suggests this disposition of the species. I can not refer to the *Prachtflora* but Corda in *Icones* V, 14, describes a "stroma."

Without knowing just how the genus *Gibellula* or *Corethropsis* is going to be defined, I venture to contribute to it the following species. I assume that the so-called "basidia" and "sterigmata" are the lower and longer joints or spores of a chain proliferously developed, as in *Cladosporium* for example.

GIBELLULA CAPILLARIS Morgan n. sp.—Stroma simple, capillary, flexuous, curved and coiled, fulvous, whitish at the summit; the base none or very short, almost the whole surface sporiferous. Hyphae longitudinal, very slender, fulvous, solidly packed together and connate, at the surface giving off very short or minute sporiferous branchlets; the sporophores thick, obtuse, pellucid, each from its apex producing several spores in one or a few short chains, which are proliferously developed. Spores clavate, smooth, hyaline, 6.9×1.2 mic.

Growing out of very small dead insects among the old leaves in woods; Preston, O., June 14, 1903. There are as many as a dozen growing out of one small insect, curved and coiled about it like a bundle of fine hairs. The stromata 5-8 mm. long, 40-60 mic. in thickness; the sporophores scarcely longer than the spores but much thicker.

CULTURES OF UREDINEAE IN 1904.¹

J. C. ARTHUR.

The present article forms the fifth of a series of reports² by the author upon the cultures of plant rusts. They cover the years from 1899 to the present year inclusive. In these studies the grass and sedge rusts hold a prominent place, but some other heteroeocious and a few autoecious rusts have been included.

During the period when the cultures are in progress, the constant attention of one person is required to assort the material which is in germinating condition from that not yet ready to germinate, to sow the spores, to maintain a careful watch for the first appearance of the spermogonia and aecidia, and to keep the records with unimpeachable accuracy. At the beginning of the present season the Indiana Experiment Station established a cooperative agreement with the Bureau of Plant Industry of the U. S. Department of Agriculture to mutually assist in carrying on the annual culture work. Through the government assistance Mr. F. D. Kern, a senior student from the University of Iowa, recommended by Professor T. H. MacBride, was secured to take charge of the cultures. Mr. Kern proved an exceptionally able man for the position, having unusually keen and accurate powers of observation, a retentive memory, and scholarly enthusiasm. Mr. Kern's work extended through May, and a part of April and June.

¹ Read before the Botanical Society of America, Philadelphia, December 30, 1904.

² See Bot. Gaz. 29:268-276; Jour. Mycol. 8:51-56; Bot. Gaz. 35:10-23, and Jour. Mycol. 10:8-21.

I am under many obligations to a number of botanists, who have most kindly sent me teleutosporic material, and in some cases particular host plants on which sowings could be made. My especial thanks are extended to those who have made field observations, and provided me with clues to solve the relationship of isolated forms, the information received from Rev. J. M. Bates, and Mr. E. W. D. Holway, being particularly helpful. Further acknowledgments are made under the several species. I should further mention the kindness of Messrs. R. Douglas' Sons, of Waukegan, Ill., who sent twenty-five thrifty young larch without asking payment, as they did a year ago.

During the present season 90 collections of material were employed, and 261 drop cultures and 10 Petri dish cultures were made from them to test the germinating condition of the spores. Out of these 38 collections refused to germinate, and were consequently useless. There were in all 264 sowings of spores made, representing 40 species of rust, and for this purpose were required 119 species of hosts temporarily grown in pots in the greenhouse.

A few cultures were made with material for which no clues were obtainable to indicate the possible relationship, and in every case with negative results. The record is given here, as in previous years, to serve for future reference.

1. PUCCINIA on the leaves of *Elymus Canadensis* L., sent by Rev. Bates from Red Cloud, Neb., was sown on *Baptisia tinctoria*, *Polygala Senega*, *Uvularia perfoliata*, *Mimulus ringens*, *Symphoricarpos pauciflorus*, and *S. racemosus*, with no infection. Two other hosts were tried in 1903, with equally negative results.³

2. PUCCINIA on *Muhlenbergia Mexicana*, sent by Mr. E. Bartholomew from Stockton, Kans., was sown on *Hibiscus militaris*, with no infection. Similar material sent by Rev. J. M. Bates from Red Cloud, Neb., on *M. racemosa*, was sown on *Asclepias incarnata*, and twice on *Hibiscus militaris*, with no infection. What is probably the same fungus on the latter host coming from Callaway, Neb., was sown in 1902 on ten other species of hosts with equally negative results.⁴ It is evident that while some of the rust found upon *Muhlenbergia* undoubtedly is associated with the aecidium on *Hibiscus*, as Professor Kellerman clearly proved last year,⁵ there are other forms having entirely different aecidia, not yet ascertained.

3. PUCCINIA on *Carex Pennsylvanica*, sent by Rev. Bates from Red Cloud, Neb., was sown on *Ambrosia trifida*, *Polemonium reptans*, *Erigeron annuus*, *Lepidium apetalum*, and *Solidago*

³ Jour. Mycol. 10:10. 1904.

⁴ Bot. Gaz. 35:11. 1903.

⁵ Jour. Mycol. 9:109, 232. 1903.

Canadensis, with no infection. Similar material on the same species of host, gathered at Lafayette, Ind., was sown on *Oxalis violacea*, *Actaea alba*, *Macrocalyx Nyctelea*, *Apios Apios*, and *Solidago ulmifolia*, with no infection. What is probably the same species of rust, on the same host, was sown in 1903 on eleven other species of hosts with negative results.⁶

4. PUCCINIA on *Carex graviora*, sent by Rev. Bates from Red Cloud, Neb., was sown on *Steironema ciliatum*, with no infection. Similar material from the same source was sown in 1903 on twelve other species of hosts with negative results.⁷

5. PUCCINIA LUDIBUNDA E. & E., sent by Mr. E. Bartholomew from Stockton, Kans., was sown upon *Steironema ciliatum*, *Macrocalyx Nyctelea*, and *Xanthium Canadense*, with no infection.

6. PERIDERMIIUM on *Pinus rigida* was sent by Professor W. A. Kellerman from Sugar Grove, Ohio, in fine quantity, with the suggestion that it would probably grow upon *Campanula*. It was sown June 1st on what were supposed to be four plants of *C. Americana*, but which proved to be *Lobelia syphilitica*, when the plants came into bloom. The plants were unusually thrifty, and conditions for success were good, but there was no infection. Part of the same collection of spores grew on *C. Americana*, when sown by Prof. Kellerman,⁸ showing that they belonged to *Coleosporium Campanulae* (Pers.) Lev.

Sixteen species of rusts were successfully grown, that had been studied with success before, and reported upon by the writer and in part by other investigators. Mention of them here serves to confirm previous work, and to give some additional knowledge regarding hosts.

I. MELAMPSORA MEDUSAE Thuem.—Teleutosporic material of this species on *Populus deltoides* was obtained near Lafayette, Ind., and sown May 10 on *Larix decidua* and *Euonymus obovatus*. The latter gave no result, but the former showed spermogonia on May 25, yet owing to weakness of the hosts no aecidia formed. The same collection was used to sow on *Larix laricina* (Du R.) Koch (*L. Americana* Michx.) May 23, which showed spermogonia June 4, but the host was too weak to permit aecidia to form.

Teleutosporic material on *P. deltoides* from Spirit Lake, Iowa, by the writer was sown May 10, on *Larix decidua* and *L. laricina*, with only feeble results on the former owing to the weakness of the hosts. Another sowing was made May 23 on *L. decidua*, which gave abundance of spermogonia on May 30, and an equal abundance of aecidia on June 4.

⁶ Jour. Mycol. 10:10. 1904.

⁷ Jour. Mycol. 10:10. 1904.

⁸ Jour. Mycol. 11:32. 1905.

Teleutosporic material on *Populus tremuloides* Michx. was sent from Racine, Wis., by Dr. J. J. Davis, and was sown on *Larix decidua*, May 25. Abundance of well developed spermogonia appeared on June 5, followed by strongly developed aecidia on June 10. This culture is specially significant in showing that the poplar rust of North America is probably all of one species, as assumed in last year's report of cultures.⁹

2. PHRAGMIDIUM SPECIOSUM Fr. has twice before been the subject of cultures, being grown in 1899¹⁰ on a tea rose from the garden, and in 1902¹¹ on *Rosa humilis*. The teleutosporic material used this season was obtained by the writer at Spirit Lake, Iowa, on *Rosa Arkansana*. It was sown on *R. Arkansana* Port., *R. Carolina* L., *R. humilis* Marsh., and *R. nitida* Willd., with abundant success in each case. It was sown twice on *R. lucida* Ehrh. without success, although the host was in fine growing condition. The dates were as follows:

May 7, Teleutospores sown on *R. Arkansana*; May 14, spermogonia; May 20, aecidia.

May 7, Teleutospores sown on *R. Carolina*; May 14, spermogonia; May 18, aecidia.

May 17, Teleutospores sown on *R. humilis*; May 23, spermogonia; May 30, aecidia.

May 17, Teleutospores sown on *R. lucida*; no infection.

June 1, Teleutospores sown on *R. lucida*; no infection.

June 1, Teleutospores sown on *R. nitida*; June 8, spermogonia; June 15, aecidia.

Whether the failure to infect *R. lucida* was due to the greater mechanical resistance of the firm leaves, or to a physiological difference in the host can not be stated, but I am inclined to favor the former explanation.

3. PUCCINIA HELIANTHI Schw.—Three collections of sunflower-rust were used for cultures this season. A collection was obtained from Spirit Lake, Iowa, on *Helianthus laetiflorus*, one from Fair Oaks, in northern Indiana, on *H. mollis*, and one from Lafayette, Ind., on *H. grosse-serratus*, all by the writer. Another collection was used, but the host could not be determined with certainty, and the results are discarded. Three collections seemed to be in perfect condition, but could not be made to germinate. Forty sowings were made from the three collections used, and as a large space would be required to report the full data, the results will be given in tabular form. In this table decided and complete results are shown by an exclamation point, infection which was meager, grew slowly and gave no aecidia or very few, is shown by a semicolon, a sowing which gave no infection is indicated by a single period, and where no sowings were made a dash is used. Fifteen

⁹ Jour. Mycol. 10:13. 1904.

¹⁰ Bot. Gaz. 29:271. 1900.

¹¹ Bot. Gaz. 35:17. 1903.

species of *Helianthus* were employed, on which to sow the teleutospores.

CULTURES OF HELIANTHUS RUST.

Hosts for cultures	Source of teleutosporic material		
	<i>H. mollis</i>	<i>H. grosse-serratus</i>	<i>H. laetiflorus</i>
1. <i>H. annuus</i>	!	!	!
2. <i>H. decapetalus</i>	-	-	-
3. <i>H. divaricatus</i>	-	-	;
4. <i>H. grosse-serratus</i>	!	.
5. <i>H. hirsutus</i>	;	.	.
6. <i>H. Kellermani</i>	-	.
7. <i>H. laetiflorus</i>	!
8. <i>H. Maximiliani</i>	-
9. <i>H. mollis</i>	!	.	;
10. <i>H. occidentalis</i>	;	.	;
11. <i>H. orgyalis</i>
12. <i>H. scaberrimus</i>	!
13. <i>H. strumosus</i>	;	.	.
14. <i>H. tomentosus</i>	;	;	.
15. <i>H. tuberosus</i>

! Abundant infection.

; Infection, but slow growth and few or no aecidia formed.

. No infection.

- Not sown.

The results of this year accord closely with those of 1902 and 1903. In 1902 some success was attained in sowing spores from *H. grosse-serratus* on *H. Maximiliani*, but no success this year. In 1903 sowing spores from *H. mollis* on *H. strumosus* gave no infection, this year a few spermogonia were formed, but no further development took place. In all other respects the work of the three years is in perfect accord. Altogether sixty-four sowings have been made.

Looking over the accompanying table it will be seen that each set of spores grew upon the species of host from which derived, but not upon the other two species, except that spores from *H. laetiflorus* sown on *H. mollis* gave a tardy showing of spermogonia, without further development. Also each set of spores grew luxuriantly upon *H. annuus*, and each made a feeble growth upon *H. tomentosus*, but on all other species they either failed to infect or made a feeble growth, with the single exception that spores from *H. laetiflorus* grew well on *H. scaberrimus*.

From all results so far available, it seems that the following conclusion may safely be drawn. *Puccinia Helianthi* Schw. is a single species, having many races, for which *H. annuus* acts as a bridging host.

4. PUCCINIA SUBNITENS Diet.—Teleutosporic material of this species on *Distichlis spicata* (L.) Greene was sent from Nebraska by Rev. J. M. Bates, to whom I am also indebted for suggestions which led to one of the most interesting series of cultures yet made. In a communication dated April 30, 1904,

Rev. Bates says: "Last spring I found *Æcidium* on *Cleome serrulata* in two nearby localities, and on *Chenopodium album*, closely associated with the rust on *Distichlis spicata*, and no other. Now I have it again under same conditions. I wrote Mr. Holway about it and shocked him; he does not think it possible. But I am well convinced that it is the same as on *Chenopodium*" [proved by cultures in 1902 from *Distichlis*-rust sent by Rev. Bates]. Further reasons were given for believing that the *Cleome* and *Chenopodium* aecidia came from teleutospores on *Distichlis*, among them being that "last year I watched for the uredo from it on the *Distichlis*, and got it May 21, after collecting the first *Cleome* aecidia May 5." All these observations seemed very convincing, yet the deductions seemed very improbable. He followed up the statements by sending seedling plants of *Cleome serrulata* and *Chenopodium album* on which the large, brilliant orange-colored aecidia occurred in remarkable profusion, and so much alike that in appearance and structure they had to be pronounced identical. As the season progressed Rev. Bates also sent freshly collected specimens of aecidia on *Roripa sinuata* (Nutt.) Hitch., *Sophia incisa* (Engelm.) Greene, and *Salsola Tragus* L., which he considered belonged to the same inclusive species. The results of my cultures confirm the above clever observations, and add still other hosts for the aecidium. The data are as follows:

May 17, Sown on *Chenopodium album*; May 25, spermogonia; June 5, aecidia.

May 17, Sown on *Cleome spinosa*; May 25, spermogonia; May 30, aecidia.

May 17, Sown on *Lepidium apetalum*; May 25, spermogonia; June 7, aecidia.

May 30, Sown on *Lepidium Virginicum*; June 7, spermogonia; June 16, aecidia.

May 30, Sown on *Sophia incisa*; June 7, spermogonia; plant injured.

May 30, Sown on *Erysimum asperum*; June 5, spermogonia; June 14, aecidia.

May 30, Sown on *Cleome spinosa*; June 5, spermogonia; June 14, aecidia.

We have here a demonstration of the remarkable fact, not known for any other species of rust so far as I recall, that *Puccinia subnitens* with teleutospores on *Distichlis spicata* has aecidia growing with equal vigor upon species belonging to three families of plants. The teleutospores for the above sowings were all taken from the same collection, and from only a few leaves of the grass, which precludes the possibility of a differentiation in the teleutoform, or any division into races. The aecidium is unusually well marked. Going over my herbarium and taking out the forms which are identical with this species, beyond a doubt, and adding to those already mentioned, we have the following hosts and distribution for the aecidium of this species.

Puccinia subnitens Diet.

On Chenopodiaceae:

Chenopodium album L. Montana, New Mexico, Nebraska.*Chenopodium leptophyllum* (Moq.) Nutt. Nebraska.*Chenopodium glaucum* L. Montana.*Salsola Tragus* L. Nebraska.

On Capparidaceae:

Cleome serrulata Pursh. Nebraska, Montana.*Cleomella parviflora* A. Gr. Nevada.

On Cruciferae:

Lepidium apetalum Willd. Nebraska, Montana.*Roripa sinuata* (Nutt.) Hitch. Nebraska.*Sophia incisa* (Engelm.) Greene. Nebraska.*Stanleya pinnata* (Pursh.) Britt. Colorado.

5. PUCCINIA PANICI Diet.—The connection of this rust with *Æcidium Pammelii* Trel. on *Euphorbia corollata* L. was reported by William Stuart¹² based on somewhat meager but seemingly convincing cultures made in 1901. Teleutospore material for the present trial was obtained at Fair Oaks, Ind., on *Panicum virgatum*. It was sown on *Euphorbia corollata* May 16, and again May 24, and both sowings showed the most abundant results, giving the first spermogonia respectively on May 24 and June 1, and aecidia May 30 and June 9. There can be no doubt that these two forms are members of one species. While at Lafayette the rust is very rare, at Fair Oaks it is exceedingly abundant on both the *Panicum* and the *Euphorbia*. It is one of the few glumaceous rusts observed by the writer, having so nearly an equal display of both the aecidial and teleutospore forms. The aecidial form having first been published, requires the name to be written PUCCINIA PAMMELII (Trel.) nom. nov.

6. PUCCINIA VERBENICOLA (E. & K.) Arth.—Previous cultures¹³ with this species were verified by sowing teleutospores, from *Sporobolus longifolius* sent by Rev. J. M. Bates from Red Cloud, Neb., on *Verbena urticaefolia*, May 16, resulting in spermogonia May 23 and aecidia May 30. Also another successful culture was made with similar material sent by Mr. E. Bartholomew from Stockton, Kans., sown on *V. urticaefolia* June 3, showing spermogonia June 11, and aecidia June 18.

7. PUCCINIA WINDSORIAE Schw.—Teleutospores from *Tricuspis seslerioides* Torr., Lafayette, Ind., were sown May 19, on *Ptelea trifoliata* and *Xanthoxylum Americanum*, both members of the family Rutaceae, and both known to be hosts to an aecidium. Although the conditions were exceptionally favorable, no infection resulted on *Xanthoxylum*, while *Ptelea*

¹² Proc. Ind. Acad. Sci. for 1901:284. 1902.¹³ Bot. Gaz. 29:274. 1900, and 35:16. 1903.

gave spermogonia May 25, and aecidia May 31, in accordance with results heretofore obtained.¹⁴

8. *PUCCINIA FRAXINATA* (Schw.) Arth.— Cultures of this species were successfully carried out in 1899,¹⁵ showing that the aecidium occurs upon *Fraxinus*. As similar aecidia have been collected upon *Ligustrum vulgare* L., in New York, and *Adelia segregata* (Jacq.) Small (*Forestiera porulosa* Poir.) in Florida,¹⁶ members of the family *Oleaceae*, to which *Fraxinus* belongs, a number of trials were made to see if the number of hosts could be extended. Teleutosporic material was obtained at Spirit Lake, Iowa, on *Spartina cynosuroides*. Sowings were made on *Ligustrum vulgare* (2), *Ligustrum ovalifolium* (2), *Syringa vulgaris* (2), *Chionanthus Virginica* (2), *Adelia acuminata*, *Adelia ligustrina*, and *Fraxinus lanceolata*, all members of the family *Oleaceae*, yet no infection took place except on the last host. Although the conditions for success were seemingly excellent, still I am not fully convinced that some of these failures were not due to accident. I am under obligation to Dr. George V. Nash, of the N. Y. Bot. Garden, for a plant of *Adelia acuminata*, sent from the Garden for this culture work.

9. *PUCCINIA IMPATIENTIS* (Schw.) Arth.— Teleutosporic material on *Elymus Virginicus* was sent from Racine, Wis., by Dr. J. J. Davis, and sown May 7, on *Clematis Virginiana* and *Impatiens aurea*. The first gave no infection, the second showed spermogonia May 14, and aecidia May 23.¹⁷

10. *PUCCINIA POCULIFORMIS* (Jacq.) Wettst.— Teleutosporic material was found at Spirit Lake, Iowa, on *Elymus Canadensis* L., and without a careful examination was sown on *Clematis Virginiana* (2), *C. Scottii*, *Cimicifuga Americana*, *C. racemosa*, *Actaea alba*, and *Impatiens aurea*, with no infection. A microscopic study revealed the nature of the rust, and it was sown upon *Berberis vulgaris* May 18, with abundant infection, spermogonia appearing May 25, and aecidia duly following, but not recorded until June 9. Teleutosporic material was also found at Spirit Lake, Iowa, on *Agropyron tenerum*, and was sown on *Berberis vulgaris* May 10, giving an abundant infection, first showing spermogonia May 17, followed in due time by aecidia. Teleutosporic material on *Agropyron repens* was sent from Burlington, Vt., by Mr. William Stuart, and sown on *Berberis vulgaris* May 11. Spermogonia appeared May 18, but the leaves were injured before aecidia developed.

¹⁴ Bot. Gaz. 29:273. 1900, and 35:16. 1903.

¹⁵ Bot. Gaz. 29:275. 1900.

¹⁶ Specimen in herbarium of N. Y. Bot. Garden, and cited by Sydow, Monog. Ured. 1:808, under the erroneous name *F. "paludosa"*.

¹⁷ For previous cultures see Bot. Gaz. 35:18. 1903, and Jour. Mycol. 10:11. 1904.

11. *PUCCINIA RHAMNI* (Pers.) Wettst. — A number of bushes grow in the garden near the laboratory of *Rhamnus lanceolata*, *R. Caroliniana*, and *R. Cathartica*, on which aecidia appeared this season, not very plentifully, but in about equal abundance. Seedlings of *Avena sativa* were infected from all three sources. Aecidiospores were sown from *R. lanceolata* May 15, from *R. Caroliniana* May 19, and from *R. Cathartica* May 20. In each case uredospores appeared in abundance in about a week, the exact date not being recorded.

12. *PUCCINIA ANGUSTATA* Peck. — Teleutospores gathered on *Scirpus atrovirens*, Lafayette, Ind., were sown May 12, on *Lycopus Americanus*, giving spermogonia May 20, and aecidia May 27, further confirming previous cultures.¹⁸

13. *PUCCINIA PECKII* (DeT.) Kellerm. — Successful sowings¹⁹ of teleutospores from undetermined species of *Carex* were made on *Onagra biennis*, from material sent by Rev. J. M. Bates of Red Cloud, Neb., and by Dr. J. J. Davis of Racine, Wis. A sowing was also made, May 20, on *O. biennis*, from material on *C. lanuginosa* sent by Rev. Bates from Red Cloud, Neb., which gave spermogonia May 29, and aecidia June 5. The same material was sown on *Urtica gracilis* twice without success. This gives a new host for the fungus.

Teleutosporic material on *Carex trichocarpha* from the type locality of *Puccinia Bolleyana*, was sown May 6, on *Onagra biennis* and *Sambucus Canadensis*, producing infection on both hosts, and thus repeating the experience of 1902.²⁰ The *Carex* bore teleutospores of both *P. Peckii* and *P. Sambuci* (Schw.) Arth. intermixed, as was easily verified by microscopic examination.

14. *PUCCINIA CARICIS-ERIGERONTIS* Arth. — Teleutospores gathered at Lafayette, Ind., on *Carex festucacea* were sown on *Erigeron annuus*, May 12, giving heavy infection of spermogonia May 20, and of aecidia May 27. Similar material on the same host, sent by Rev. Bates from Red Cloud, Neb., was sown May 25, on *E. annuus*, and gave spermogonia June 2, and aecidia June 9. These results confirm previous work.²¹

15. *PUCCINIA ALBIPERIDIA* Arth. While the conviction is gaining ground that the aecidium of this species is the common aecidium on gooseberries, yet the excellent results of this year do not give any particular support to the view. All the aecidia grown in cultures were small and pale, and apparently

¹⁸ Bot. Gaz. 29:273. 1900, and Jour. Mycol. 8:53. 1902.

¹⁹ For previous cultures see Jour. Mycol. 8:55. 1902, and Bot. Gaz. 35:13. 1903.

²⁰ Bot. Gaz. 35:14. 1903.

²¹ Jour. Mycol. 8:53. 1902, and Bot. Gaz. 35:15. 1903.

dissimilar to the bright orange-yellow aecidia on *Ribes* in the fields.

Teleutosporic material was sent by Dr. J. J. Davis from Racine, Wis., on *Carex gracillima*, which was sown on *Ribes floridum* (3), *R. rubrum*, and *R. aureum* (2), with no infection, except that in one case a few spermogonia appeared on *R. aureum* after eleven days, but reached no further development. It was also sown with abundant success on *R. Uva-crispa* (2), *R. Cynosbati* and *R. rotundifolium* (2), thus confirming previous work.²²

Excellent teleutosporic material was found on *Carex crinita* Lam., Lafayette, Ind., and sown May 7, on *Ribes rubrum*, with no infection, on *R. Uva-crispa*, with weak infection, the plant being in poor condition, and on *R. rotundifolium* with strong infection, showing spermogonia May 17, and aecidia May 25. Another equally strong infection was secured with a sowing on the last host June 3. This culture adds another teleutosporic host.

16. PUCCINIA POLYGONI-AMPHIBII Pers. In previous years²³ this rust was sown upon three species of *Polygonum* and *Cicuta maculata* with no infection. After learning of Dr. Tranzschel's successful cultures on two European species of wild geranium²⁴ considerable effort was made to secure teleutosporic material with which to repeat the work. No rust could be found about Lafayette where it usually occurred. At Spirit Lake, Iowa, a diligent search where it had previously been common, only gave a few slightly rusted leaves. No better success was met with at Fair Oaks, Ind. An appeal to my excellent coadjutors, Prof. W. A. Kellerman, Columbus, Ohio, Rev. J. M. Bates, Red Cloud, Neb., and Dr. J. J. Davis, Racine, Wis., brought out the same experience, and only added a few slightly rusted leaves from Wisconsin. The three meager collections were, however, useless, as none of the teleutospores would germinate. I then waited for aecidia to appear on geranium and found them as rare as the teleutospores had been. Finally I obtained a few belated aecidia on *Geranium maculatum* L. (*AE. sanguinolentum* Lindl.) and sowed them on *Polygonum emersum* (Michx.) Britt., June 11, and on June 19, uredospores appeared, and eventually on Aug. 17, teleutospores began to form, the plants being kept in the greenhouse during the culture. The American and European forms are therefore identical.

²² Jour. Mycol. 8:53. 1902, and 10:11. 1904.

²³ Bot. Gaz. 35:12. 1903, and Jour. Mycol. 10:9. 1904.

²⁴ Centr. f. Bakt. 11²:106. 1903.

In addition to the foregoing results five species of rusts were grown, establishing aecidial and teleutosporic connections, not heretofore recorded. The species are heteroecious with one exception.

I. MELAMPSORA BIGELOWII Thüm. — Three collections of teleutospores on *Salix* were secured, but only one, which was obtained at Racine, Wis., on *Salix amygdaloides* Anders., and forwarded by Dr. J. J. Davis, could be made to germinate. This was sown, May 10, on *Larix decidua* Mill., and twenty days later both spermogonia and aecidia were observed in abundance, although they had probably first made their appearance some days earlier. On the same date it was sown on *Euonymus obovatus* without result. A further sowing on *Larix decidua* was made on May 25, and on June 4 spermogonia began to appear in great abundance, followed on June 10 by an equal abundance of aecidia. The aecidia are of the typical caeoma-form, and are very similar to those of *Melampsora Medusae*, the chief difference being in the spores, which are somewhat more distinctly and coarsely verrucose than in the poplar form.

The only American collections of aecidia on *Larix*, that have come to my attention, were made by E. W. D. Holway at Mt. Temple, Aug. 22, 1902, and Laggan, Aug. 23, 1902, both places in Alberta, Canada, and both collections on *Larix Lyallii* Parl. These collections agree perfectly with the aecidia raised in cultures. A comparison of the numerous collections of willow rust in my own herbarium, numbering 80 packets, and representing all sections of the United States and Canada from the Atlantic to the Pacific, shows that both the uredosporic and teleutosporic stages agree closely with one another, and with those on the material used in the culture.

A comparison with European collections shows the American form to be very different from any European species. The nearest approach to the American form is *Melampsora Larici-epitea* Kleb., the most common willow rust of Europe. The two differ, however, in a very marked way. The American form has all three sorts of spores considerably larger, the spores of the aecidia and uredo have walls twice as thick, the pores are far more evident, and the papillae on the surface are much closer together.

The name which I have adopted for this common willow rust was given by Baron von Thuemen to a collection made in California on *Salix Bigelowii*, which he stated had been received from the herbarium of Dr. W. G. Farlow. Von Thuemen's herbarium was burned some years ago, and the type is consequently destroyed. In reply to an inquiry regarding the matter, Dr. Farlow states that he does not recall sending such a specimen to von Thuemen, and is unable to find a correspond-

ing specimen in his herbarium, unless one from Santa Cruz, Calif., collected by Dr. C. L. Anderson, November, 1875, could be the one intended. This specimen, however, is said to be upon *Salix brachystachys*.

Although the type collection can not be accurately identified or duplicated, there seems to be no reason to question the reference of the fungus described to the common willow rust growing throughout California and the other parts of North America. Dr. Farlow kindly sent me a part of his specimen on *S. brachystachys*, and also a specimen on *S. Bigelowii*, collected in Washington by C. V. Piper in 1899, and they agree in all essential particulars with the eastern collections on willow.

I have also had the privilege, through the kindness of Mr. Chas. H. Peck, of examining the type specimen of *Lecythea macrosora* Pk. (Bot. Gaz. 5:35. 1880), collected in Colorado by Brandegee, and thought to be on *Epilobium*, and find that it is the uredostage of this same species of willow rust. An examination of type material of *Melampsora paradoxa* D. & H. shows no important deviation from the common form. The peculiar free teleutospores figured by Dr. Dietel (Hedw. Beibl. 40:33. 1901) appear to be occasional reversional forms, due to disturbed nutrition or some such cause. Similar isolated teleutospores have been described by Klebahn in European material (Ztschr. f. Pf.-Kr. 9:98). The name, *Melampsora maculosa* D. & H., is *nomen nudum*. It was applied to forms showing especially bright yellow discoloration of the leaf about the uredosori, but without other marked characters, as examination of type material shows.

The species may be characterized as follows:

MELAMPSORA BIGELOWII Thuem.

O. Spermogonia amphigenous, scattered, or somewhat gregarious, minute, punctiform, pale yellow, inconspicuous, subcuticular, conical, 60-80 μ in diameter, 40-45 μ high.

I. Aecidia chiefly hypophyllous, scattered or somewhat gregarious, small, .1-.2 mm. across, oblong, pale yellow fading to white, inconspicuous, formed between the epidermis and mesophyll, soon naked, pulverulent; aecidiospores globose, 15-22 by 18-27 μ ; wall colorless, 2-3 μ thick, finely and evenly verrucose, with distinct papillae, pores scattered, noticeable.

On *Larix Lyallii* Parl., Alberta, Can., and probably on other species of *Larix* in various parts of the United States and Canada. Cultivated on *L. decidua* Mill. and *L. laricina* (DuRoi.) Koch.

II. Uredosori chiefly hypophyllous, usually on conspicuous yellow spots, scattered or gregarious, round, .3-.5 mm. across, orange-yellow fading to pale yellow, soon naked, somewhat pulverulent; uredospores globose, 15-19 by 17-24 μ , wall colorless, 2.5-3.5 μ thick, sparsely and evenly verrucose, pores scattered, noticeable; paraphyses intermixed with the spores, capitate, smooth, 50-70 μ long, heads 22-25 μ broad, wall 3-5 μ thick, peripheral paraphyses thinner walled and more clavate.

III. Teleutosori amphigenous, or sometimes partly or wholly epiphyllous or hypophyllous, scattered, roundish or irregular, about .5 mm. across, often confluent, orange-yellow becoming yellowish or purplish

brown, subepidermal; teleutospores prismatic or oblong, 11-14 by 29-42 μ , rounded at both ends; wall cinnamon-brown, smooth, uniformly 1 μ thick.

On *Salix amygdaloides* Anders., and many other species of *Salix*, throughout the United States and Canada.

Beside this common willow rust, another is known to occur on *Salix herbacea* L. in Greenland and on Mt. Washington, N. H., *Melampsora arctica* Rostr. One other, *Melampsora repentis* Plowr., on *Salix repens* has been reported from North America, but has not been seen by the writer.

2. PUCCINIA TOMIPARA Trel.—I am indebted to Mr. E. W. D. Holway for the suggestion, which led to the certain demonstration of the aecidial connection for this species. Mr. Holway's observations were made in the field, and showed such close association of the recently germinated teleutospores on over-wintered leaves of *Bromus ciliatus* and the appearing aecidia on *Clematis Virginiana*, that the conclusion seemed foregone. His direct observations extended over two seasons. Teleutosporic material gathered by Mr. Holway at Decorah, Iowa, was sown on *Impatiens aurea*, *Dirca palustris*, *Clematis Virginiana*, *C. Fremontii*, *C. Scottii*, *C. Viorna*, and with no infection except on *Clematis Virginiana*. Teleutosporic material of *Bromus ciliatus* was kindly sent by Dr. J. J. Davis from Kenosha Co., Wis., and sown on *Clematis Virginiana* with most abundant infection. Material was also used, obtained near Lafayette, Ind., on *Bromus ciliatus*, and sown on *Dirca palustris* and *Clematis Virginiana* with no infection of the former and the most plentiful infection of the latter. The record of dates is as follows:

May 12, Teleutospores (Iowa) sown on *Impatiens aurea*; no infection.
 May 12, Teleutospores (Iowa) sown on *Dirca palustris*; no infection.
 May 12, Teleutospores (Iowa) sown on *Clematis Scottii*; no infection.
 May 12, Teleutospores (Iowa) sown on *Clematis Fremontii*; no infection.
 May 12, Teleutospores (Iowa) sown on *Clematis Virginiana*; May 19, spermogonia; May 28, aecidia.
 May 18, Teleutospores (Ind.) sown on *Dirca palustris*; no infection.
 May 25, Teleutospores (Iowa) sown on *Clematis Scottii*; no infection.
 May 25, Teleutospores (Iowa) sown on *Clematis Fremontii*; no infection.
 May 25, Teleutospores (Iowa) sown on *Clematis Viorna*; no infectiop.
 May 25, Teleutospores (Iowa) sown on *Clematis Virginiana*; May 31, spermogonia; June 9, aecidia.
 May 30, Teleutospores (Ind.) sown on *Dirca palustris*; no infection.
 May 30, Teleutospores (Ind.) sown on *Clematis Virginiana*; June 7, spermogonia; June 15, aecidia.
 June 3, Teleutospores (Wis.) sown on *Clematis Virginiana*; June 9, spermogonia; June 16, aecidia.

This record shows that the report made last year, connecting the teleutosporic stage on *Bromus ciliatus* with the aecidium on *Dirca palustris*²⁵ was a mistake. The teleutosporic material from Lafayette, which grew so abundantly on *Clematis Virginiana* this year, came from the same plants that

²⁵ Jour. Mycol. 10:19. 1904.

were mentioned as bearing teleutospores a year ago, and standing near aecidium-laden bushes of *Dirca palustris*. Last year's supposed results, which were based on a single sowing of aecidiospores, can be explained by supposing that the *Bromus* plants were already infected when brought into the laboratory. The above plentiful data show no escape from the conclusion that the common *Bromus* rust belongs to the aecidium on *Clematis Virginiana*, and not to the aecidium on *Dirca palustris*. The name *Puccinia hydnoidea* (B. & C.) Arth., therefore, does not belong to the *Bromus* rust, but to some teleutosporic form not yet identified. The descriptions of uredospores and teleutospores given at the place cited belong to *Puccinia tomipara* Trel.

There are at least three species of aecidia found upon *Clematis* in the United States. *Aecidium occidentale* Arth. occurs on *C. Douglasii* in the northwestern region; its teleutosporic connection is not known. *Aecidium Clematidis* DC., found on *C. ligusticifolia*, *C. Scottii*, *C. Fremontii*, *C. Drummondii*, *C. lasiantha* and *C. Viorna*, ranging from Iowa to Montana and southwestward to the Pacific coast, is the first stage of *Puccinia Agropyri* E. & E. The third species is *Aecidium Clematidis* Schw., the one under consideration, found on *C. Virginiana*, ranging throughout the United States and Canada east of the Rocky mountains, and belongs to *Puccinia tomipara* Trel. It has larger spermogonia, and somewhat smaller aecidia and aecidiospores than that of *P. Agropyri*. It may be characterized as follows:

AECIDIUM CLEMATIDIS Schw.

0. Spermogonia epiphyllous, in small groups, honey-yellow, punctiform, subepidermal, globose, 90-140 μ in diameter; ostiolar filaments 40-60 μ long.

I. Aecidia hypophyllous, in orbicular groups, crowded; peridia low, margin somewhat revolute, erose; aecidiospores globoid, 16-22 by 18-26 μ , wall rather thin, 2 μ , colorless, minutely verrucose.

The teleutospores used in the cultures were all of the normal two-celled form. The original collection on which the name was based does not appear to differ in any appreciable way from the usual two-celled form except in the many-celled teleutospores, which appear to be variations not uncommon in many grass species. The hosts of all three collections used in the cultures were of the form often made a distinct species under the name *Bromus purgans* L., which differs but slightly, chiefly in pubescence, from the typical *B. ciliatus*.

3. **PUCCINIA STIPAE Arth.**—On May 9, 1903, I found at Spirit Lake, Iowa, spermogonia and young aecidia on leaves near the ground of *Aster multiflorus*, with germinated teleutospores on old leaves of *Stipa spartea* within a few feet, and no other grass or sedge rust noticeable for a considerable distance

about. I was unable to secure material to carry forward this suggestive observation until the season following. Teleutospore material was obtained at Spirit Lake, Iowa, and on May 9, 1904, was sown on *Aster ericoides*, which gave very abundant spermogonia on May 18, and strong aecidia on May 27. A second sowing was made on May 13 and another on May 21, which gave marked results with *Aster multiflorus* and *A. Novae-Angliae*, but no infection with *A. cordifolius*, *A. Drummondii*, *A. paniculatus* and *A. sericeus*, although the host plants were in vigorous growing condition. The data for these sowings are as follows:

- May 9, Teleutospores sown on *Aster ericoides*; May 18, spermogonia;
May 27, aecidia.
May 13, Teleutospores sown on *Aster multiflorus*; May 23, spermogonia;
May 28, aecidia.
May 13, Teleutospores sown on *Aster cordifolius*; no infection.
May 21, Teleutospores sown on *Aster multiflorus*; May 29, spermogonia;
June 4, aecidia.
May 21, Teleutospores sown on *Aster Novae-Angliae*; May 27, spermogonia;
June 3, aecidia.
May 21, Teleutospores sown on *Aster Drummondii*; no infection.
May 21, Teleutospores sown on *Aster paniculatus*; no infection.
May 21, Teleutospores sown on *Aster sericeus*; no infection.

The spermogonia and aecidia of this species are wholly unlike those of the common *Carex* rust, both in general appearance and microscopic characters. The leaves of the host are thickened and more or less distorted by the fungus, and the aecidia have the pustular appearance of *AE. recedens* on *Solidago*, *AE. hemisphericum* on *Lactuca*, and other Composite-species having very delicate peridia, or none. The spores instead of being a bright orange-yellow, as in most aecidia, are decidedly brown. It is a very distinctive form, and yet I have been unable to learn of but one collection having been made, beside my own. It was found on *Aster multiflorus*, Bourbon Co., Kans., May 29, 1902, by A. O. Garrett, who kindly sent me a specimen.

Finding the aecidium of *Puccinia Stipae* shows that the American species is wholly distinct from the European species on *Stipa*, which Bubak has proven by cultures belongs to an aecidium on the Labiate-genus *Thymus*. The aecidium does not attack all species of *Aster* alike, but judging from present cultural results, can be expected on the suffrutescent forms having coarse narrow leaves of firm texture. Such species may represent a natural group within the genus, but if so the taxonomists have not defined it. It is somewhat more probable that they represent an ecological group adapted to a dry atmosphere. The aecidium has not been characterized, and therefore a description is appended.

PUCCINIA STIPAE Arth.

0. *Spermogonia* amphigenous, irregularly grouped, punctiform, brownish orange, subepidermal, globose, 95–110 μ in diameter; ostiolar filaments free, 35–50 μ long.

1. *Aecidia* amphigenous, in irregular groups, on hypertrophied spots, brownish orange, small; peridia low, fragile and evanescent, cells abutted or slightly imbricated, smooth outside, tuberculate inside, thin walled; aecidiospores globose, 18–25 μ in diameter, wall medium thick, 1–2 μ , brownish yellow, closely and finely verrucose, pores many, scattered, often conspicuous.

On *Aster multiflorus* Ait., Iowa and Kansas, and also cultivated on *A. ericoides* L., and *A. Novae-Angliae* L.

4. *PUCCINIA SORGHI* Schw.—Through a fortunate observation in the field, June 2, 1904, upon finding aecidia on *Oxalis cymosa* Small, the attempt was made to grow the aecidiospores on young corn plants, which resulted in complete success. On June 2, aecidia-bearing leaves were suspended over potted corn plants, under a large bell jar. On June 10 uredosori broke through the epidermis, and on July 10 teleutosori began to appear. This is taken as demonstrating the genetic connection of *Aecidium Oxalidis* Thuem. and *Puccinia Sorghi* Schw.

A detailed account of this culture, with citation of all collections of the aecidium on various species of *Oxalis*, known to the writer, has already been published in the Botanical Gazette (38:64–67. 1904).

5. *PUCCINIA PODOPHYLLI* SCHW.—This autoecious species of rust is very common in the vicinity of Lafayette, Ind. Leaves bearing recently opened aecidia were placed above the leaves of two potted plants on May 7, and both kept under bell-jars for three days. On May 23, one plant began to show teleutospores, and, on May 20, the other plant exhibited many whitish spots which began to burst open and display teleutospores on May 24. Both plants proved to be heavily infected over large areas of the leaves.

The principal interest in this culture comes from the fact that the sowing of aecidiospores did not give rise to secondary aecidia, but exclusively to the characteristic teleutospores. Sydow in his Monog. Uredinearum (1:526) states that this species has primary and secondary aecidia, the former being more common and forming extended groups, the latter coming later with the teleutospores and are sparsely distributed with few together in small groups. As many similar species of rusts have repeating aecidia, it would be natural to suppose that in this case the secondary generation arose from the aecidiospores of the first generation. The culture was made from a luxuriant development of the primary form; and from the fact that no secondary aecidia appeared, I think it can be safely assumed, that the so-called secondary generation arises, generally at least, from teleutospores, and its sparse distribution is due to the smaller number of sporidia which strike the leaf, or to

the inhibition of maturer tissues in the leaf. So far as this culture can be taken as evidence, it shows that a true secondary generation of the aecidium probably does not occur in *P. Podophylli*.

SUMMARY.

The following is a complete list of successful cultures made during the season of 1904. It is divided into the two series: species previously reported by the writer or other investigators, and species now reported for the first time.

A. Species previously reported.

1. MELAMPSORA MEDUSAE Thuem.—Teleutospores from *Populus deltoides* Marsh. and *P. tremuloides* Michx. sown on *Larix decidua* Mill., and from *P. deltoides* Marsh. sown on *L. laricina* (Du R.) Koch.

2. PHRAGMIDIUM SPECIOSUM Fr.—Teleutospores from *Rosa Arkansana* Port. sown on *R. Arkansana* Port., *R. humilis* Marsh., *R. Carolina* L., and *R. nitida* Willd.

3. PUCCINIA HELIANTHI Schw.—Teleutospores from *Helianthus mollis* Lam. sown on *H. annuus* L. and *H. mollis* Lam. with abundant infection, and on *H. hirsutus* Raf., *H. occidentalis* Ridd., *H. strumosus* L., and *H. tomentosus* Michx. with slight infection; from *H. grosse-serratus* Mart. sown on *H. annuus* L., and *H. grosse-serratus* Mart. with abundant infection, and on *H. tomentosus* Michx. with slight infection; and from *H. laetiflorus* Pers. sown on *H. annuus* L., *H. laetiflorus* Pers., and *H. scaberrimus* Ell. with abundant infection, and on *H. divaricatus* L., *H. Kellermani* Britton, *H. mollis* Lam., *H. occidentalis* Ridd., and *H. tomentosus* Michx. with slight infection.

4. PUCCINIA SUBNITENS Diet.—Teleutospores from *Distichlis spicata* (L.) Greene were sown on *Chenopodium album* L., *Cleome spinosa* L., *Lepidium apetalum* Willd., *L. Virginicum* L., *Sophia incisa* (Engelm.) Greene, and *Erysimum asperum* DC.

5. PUCCINIA PAMMELII (Trel.) Arth.—Teleutospores from *Panicum virgatum* L., sown on *Euphorbia corollata* L.

6. PUCCINIA VERBENICOLA (E. & K.) Arth.—Teleutospores from *Sporobolus longifolius* (Torr.) Wood sown on *Verbena urticaefolia* L.

7. PUCCINIA WINDSORIAE Schw.—Teleutospores on *Tricuspis seslerioides* Torr. sown on *Ptelea trifoliata* L.

8. PUCCINIA FRAXINATA (Schw.) Arth.—Teleutospores on *Spartina cynosuroides* Willd. sown on *Fraxinus lanceolata* Borck.

9. PUCCINIA IMPATIENTIS (Schw.) Arth.—Teleutospores on *Elymus Virginicus* L. sown on *Impatiens aurea* Muhl.

10. PUCCINIA POCULIFORMIS (Jacq.) Wettst.—Teleutospores on *Elymus Canadensis* L., *Agropyron tenerum* Vasey and *A. repens* (L.) Beauv. sown on *Berberis vulgaris* L.

11. PUCCINIA RHAMNI (Pers.) Wettst.—Æcidiospores on *Rhamnus lanceolata* Pursh. *R. Caroliniana* Walt., and *R. Cathartica* L., sown on *Avena sativa* L.

12. PUCCINIA ANGUSTATA Peck.—Teleutospores on *Scirpus atrovirens* Muhl. sown on *Lycopus Americanus* Muhl.

13. PUCCINIA PECKII (DeT.) Kellerm.—Teleutospores on *Carex lanuginosa* Michx., and *C. trichocarpa* Muhl. sown on *Onagra biennis* (L.) Scop.

14. PUCCINIA CARICIS-ERIGERONTIS Arth.—Teleutospores on *Carex festucacea* Willd. sown on *Erigeron annuus* (L.) Pers.

15. PUCCINIA ALBIPERIDIA Arth.—Teleutospores on *Carex gracillima* Schw. sown on *Ribes Uva-crispa* L., *R. Cynosbati* L., and *R. rotundifolium* Michx., with a slight infection on *R. aureum* Pursh; and on *C. crinita* Lam. sown on *R. Uva-crispa* L. and *R. rotundifolium* Michx.

16. PUCCINIA POLYGONI-AMPHIBII Pers.—Æcidiospores on *Geranium maculatum* L. sown on *Polygonum emersum* (Michx.) Britt.

B. Species reported now for the first time.

1. MELAMPSORA BIGELOWII Thüm.—Teleutospores on *Salix amygdaloides* Anders. sown on *Larix decidua* Mill.

2. PUCCINIA TOMIPARA Trel.—Teleutospores on *Bromus ciliatus* L. sown on *Clematis Virginiana* L.

3. PUCCINIA STIPAE Arth.—Teleutospores on *Stipa spartea* Trin. sown on *Aster multiflorus* Ait., *A. ericoides* L., and *A. Novae-Angliae* L.

4. PUCCINIA SORGHI Schw.—Æcidiospores on *Oxalis cymosa* Small sown on *Zea Mays* L.

5. PUCCINIA PODOPHYLLI Schw.—Æcidiospores on *Podophyllum peltatum* L. sown on same host.

Purdue University, Lafayette, Ind.

**FIRST SUPPLEMENT TO NEW GENERA OF FUNGI
PUBLISHED SINCE THE YEAR 1900,
WITH CITATION AND ORIGINAL DESCRIPTIONS.**

COMPILED BY W. A. KELLERMAN AND P. L. RICKER.

Most of the Genera here reproduced were published during the year 1904. In our previous list a few, of date since Jan. 1, 1904, were by accident omitted; these are here included. The Second Supplement will contain all new genera that may be proposed during the current year. The co-operation of authors is solicited — especially when a genus is published in a foreign periodical that is not widely distributed. Authors will oblige us by sending a copy promptly.

[Myxomycetae]

IOCRATERIUM E. Jahn n. g. Myxomycetae. Hedwigia, 43: 302. 12 Juni 1904.

"Iocraterium rubescens (Rex) nov. gen. No. 2671. Mit der vorigen Art vergesellschaftet. (Fig. 1.)

"Wahrscheinlich identisch mit dem Craterium rubescens, das von Rex nach einem Funde in Louisiana beschrieben worden ist. Später hat Dister ermittelt, dass im Pariser Herbarium aufbewahrte Proben des von Spegazzini aufgestellten Didymium paraguayense zu derselben Art gehören. Herr Lister hat mir die Identität dieser den dritten Fund bildenden Sporangien und der älteren aus Louisiana und Paraguay bestätigt und hinzugefügt, dass die Proben der beiden früheren Funde sich in einem sehr mangelhaften Zustand befinden.

"So erklärt es sich wohl, dass wesentliche Kennzeichen der Art, der Besitz einer echten Columella, bisher übersehen worden ist. Sie ist mit Kalk gefüllt und so zerbrechlich, dass ihre Bruchstücke bei der Präparation leicht für Knoten des Capillitiums und Teile der Sporangienhaut gehalten werden. Ich selbst bin erst nachträglich durch einen Zufall auf die Columella aufmerksam geworden. Am klarsten wird ihr Bau und ihr Ansatz am Stiel, wenn man ein Sporangium mit dem Mikrotom in Längsschnitte zerlegt. Man sieht dann, dass der Stiel mit Kalk gefüllt und im oberen Teil von kleinen Maschen eines Faserwerks durchzogen ist. Darauf baut sich die ganz mit dem rosenroten Kalk erfüllte Columella auf (vergl. Fig. 1 C). Von dieser gehen in gewissen Abständen die Capillitiumfäden ab, die sich hier und da zu grösseren Knoten erweitern (Fig. 1 C und 1 D). Auch in ihnen ist der rosenrote Kalk enthalten. Die Columella reicht niemals bis zur Spitze des Sporangiums, sondern löst sich vorher in eine grosse Zahl von Kalkknoten auf, die in einem etwas dichteren Gewirr von Capillitiumfäden sitzen

"Die Haut des Sporangiums besteht aus einer ziemlich derben schön violett gefärbten Membran, die aussen überall mit den rosenroten Kalkkörnchen bedeckt ist. Eine Aufrisszone für einen Deckel ist nicht vorgebildet.

"Sehr eigentümlich sind die linsenförmigen Kalkkörper, die in der Membran liegen. Sie sind schon von Lister beobachtet worden. Ihr Bau tritt auf Längsschnitten deutlich hervor (Fig. 1 C und 1 E). Die Linse ist innen von der derben, sich nach innen wölbenden violetten Membran, aussen von einer ziemlich zarten Haut begrenzt und ebenfalls auch mit Kalk gefüllt. Oft geht von der Innenhaut ein Capillitiumfaden ab. Hierbei kommt es vor, dass eine Linse nach innen kugelartig aufgetrieben ist. Die zarte Aussenmembran der Linse ist auch aussen noch von einer dünnen Kalkschicht bebedeckt (Fig. 1 E).

"Capillitium und Sporen sind schon von Lister treffend beschrieben worden.

"Die Färbung ist im auffallenden Licht schön violett. Im durchfallenden Licht erscheint die trockene Sporangiehaut prachtvoll rosenrot, feuch (in Glyzerin) ist sie dagegen auch im durchfallenden Licht schön blauviolett. . . .

"Die angeführten Eigentümlichkeiten im Bau der Sporangien (*to ion*, das Veilchen) nenne. Morphologisch ist sie sehr interessant."

[Phycomycetae]

MYCELOPHAGUS Mangin n. g. Oomycetae. Comptes Rendus des Séances de l'Académie des Sciences, 136:471. 16 Feb. 1903.

"Sur la maladie du Chataigner. . . .

"Le parasite, cause de cette destruction, est un champignon à mycélium délicat dont l'observation a été rendue possible malgré son extrême ténuité, à cause de la présence de la cellulose dans sa membrane, fait assez rare parmi les nombreuses espèces qui pullulent dans le sol. Son mycélium est constitué par de très fins filaments ayant 1μ à 2μ de diamètre, parfois renflés en certains points et atteignant alors 3μ à 4μ ; il est très irrégulièrement cloisonné.

"Ce parasite est le plus souvent entièrement immergé dans les mycorrhizes, dispersant ses filaments très finement contournés dans le revêtement mycélien de celles-ci ou dans le tissu plus ou moins décomposé de la radicle; il végète rarement à l'état de liberté dans le sol, ses filaments passant d'une mycorrhize à la suivante au moyen de rameaux divariqués de faible longueur. Toutefois, il peut s'étendre à une grande distance d'un massif de mycorrhizes à un autre, mais il emprunte alors pour cheminer un support ou un canal, constitué par les rhizomorphes d'autres espèces. Là, il s'anastomose avec le mycélium des rhizomorphes ou se loge dans l'espace tubulaire qu'ils déterminent, parfois même il pénètre dans les filaments mycéliens à l'intérieur desquels il s'allonge.

"C'est seulement dans ces rhizomorphes qu'il fructifie, assez rarement à la vérité, puisque j'ai les fructifications trois fois en quatre ans: Aulas (Gard), Saint-Pierreville (Ardèche.)

"Les fructifications se présentent sous l'aspect de masses renflées plus au moins régulièrement, à l'extrémité de rameaux latéraux et ayant 6μ à 8μ de large; ce sont là des formes jeunes. Dans d'autres rhizomorphes, les fructifications ont l'aspect de vésicules à parois minces, terminant toujours des rameaux, et ayant 20μ de diamètre en renfermant une spore sphérique à membrane tantôt mince, tantôt très épaisse, ayant toutes les réactions de la callose. Sous cette forme, les fructifications sont identiques aux oospores des Péronosporées."

[Phycomycetae]

SPINALIA Vuillemin n. g. Siphomycetae. Bulletin de la Société Mycologique de France, 20:32. 25 Feb. 1904.

"Filaments continus; cloisons cicatricielles dans les tubes épuisés. Axe fructifère très long, rampant ou grimpant, redressé en pédicelle.

"Ramification latérale rare et tardive donnant parfois des pédicelles secondaires.

"Tête chargée de rameaux rayonnants, réduits à deux articles nés en direction basifuge; le premier formé, tout en gardant le protoplasme dense et la caducité des spores, révèle un début de différenciation en stérigmate en persistant plus longtemps sur la tête que l'article terminal."

"Spinolia radians sp. nov. . . ."

[Phycomycetae]

UROPHLYCTITES P. Magnus n. g. Chytridiaceae. Berichte der Deutschen Botanischen Gesellschaft, 21:250. 1903.

"In der englischen botanischen Zeitschrift "The New Phytologist," Vol. II, Nr. 3 (März 1903), S. 49-53, weist F. W. Oliver auf einige an den Blättern fossiler Pflanzen auftretende Bildungen hin, die er auf Grunde seiner genauen, durch instruktive Abbildungen erläuterten Untersuchungen Fiedern von *Alethopteris aquilina* (Schloth.) Goepp. nachgewiesenen Parasiten. Auf der Unterseite der Fiedern treten kugelige, etwas hervorragende Höhlungen auf, die mit starker Wandung versehen sind und zahlreiche kleine, Sporen ähnliche, ziemlich kugelige Körper enthalten. Die Wand ist, wie gesagt, stark verdickt und scheint die benachbarten Parenchymzellen flach zusammengedrückt zu haben. In einem Falle, der auch abgebildet ist, beobachtete Oliver, dass die sporenähnlichen Körper an den Enden dünner Hyphen saßen, die von der dicken Wandung der Höhlung ausgehen, oder besser gesagt, an der dicken Wandung der Höhlung sitzen. Die sporenähnlichen Körper sind nicht ganz kugelig; ihr längerer Durchmesser ist ungefähr 16μ . Ihre Wand ist bedeckt mit zahlreichen winzigen Erhebungen.

"Mich erinnern diese Bildungen sehr lebhaft an eine Art der Gattung *Urophlyctis*, die auf Umbelliferen auftritt und die ich *Urophlyctis Kriegeriana* genannt habe. . . .

"Aus alledem geht hervor, dass der von F. W. Oliver in den Fiedern von *Althropteris aquilina* (Schlotheim, Goepp, nachgewiesene Pilz in seinem Aufbau, soweit er von Oliver nachgewiesen ist, sehr nahe der Gattung *Urophlyctis* stehen möchte, Oliver hat voller Bescheidenheit unterlassen ihn zu benennen. Ich stehe nicht an, ihn als nahe verwandt der Gattung *Urophlyctis* Schroet. zu bezeichnen und nenne die Gattung *Urophlyctites*, während ich die von F. W. Oliver nachgewiesene und in ihrem Aufbau dargelegte Art als *Urophlyctites Oliverianus* P. Magn. bezeichne."

[Phycomycetae]

ZYGORHYNCHUS Vuillemin n. g. Mucorineae. Bulletin de la Société de France, 19:116. 30 Apr. 1903.

"Filaments du thalle continus, ramifiés, inégaux, parfois nouveaux, plongeants, rampants ou formant un duvet aérien cotonneux. Chlamydospores lisses, interclaires ou terminales. Pédicelles isolés ou groupés sur des systèmes sympodiques irréguliers qui portent des sporocystes normaux, des sporocystes abortifs et des zygosporos. Pas d'apophyse. Sporocystes uniformes, à membrane plus ou moins conrescente avec la base de la columelle, plus ou moins incrustée d'oxalate de calcium, plus ou moins diffluente. Quand la membrane est fugace, elle laisse à la base une collerette. Spores nombreuses, petites, lisses. Zygosporos fortement hérissées, rostrées. Tympan d'insertion subopposés, inégaux, le plus petit au sommet du rostre. Suspenseurs inégaux et dissemblables, le petit droit et court, de grand long, courbé, terminé par un renflement piriforme. Gamètes très inégaux. L'appareil zygosporé naît sur un système de filaments aériens, comme les sporocystes.

"2 espèces: *Zygorhynchus heterogamus* (*Mucor heterogamus* Vuillemin. Bulletin de la Société botanique de France, 1886, t. XXIII, p. 236. Figuré: Bulletin de la Société des Sciences de Nancy, 1886, Pl. II.)"

"*Zygorhynchus Moelleri* n. sp."

[Ascomycetae]

ALLANTONECTRIA Earle n. g. Hypocreaceae. Plantae Bakerianae, 2:11. 23 March 1901.

"Perithecia as in *Nectria*; ascospores allantoid, 1-celled, cylindrical, curved, hyaline.

"*Allantonectria Yuccae* n. sp. . . . "

[Ascomycetae]

ASTEROPELTIS P. Hennings n. g. Mycrothyriaceae. Hedwigia, 43:380. Sept. 1904.

"Perithecia membranacea dimidiato-scutata, suborbiculata medio pertusa, margine appendiculis rigidis rectis e hyphis con-

flatis vestita; asci fusoides vel clavati 8-spori, paraphysati; sporae cylindratae, pluriseptatae, hyalinae. Micropeltide et Scolecopeltide affinis.

“Ein äusserst merkwürdiger Pilz, der durch seine aufrechten, besenartigen schwarzen Borsten, welche aus locker verflochtenen Hyphen bestehen, im feuchten Zustande sternförmig ausgebreitet das Perithecium umgeben, ausgezeichnet ist. Bezüglich der Sporen steht der Pilz zwischen Micropeltis und Scolecopeltis, bei der völligen Reife scheinen die einzelnen Sporengleider zu zerfallen. (Hierzu Textfigur.)”

[Ascomycetae]

BALANSIELLA P. Hennings n. g. Hypocreaceae. Hedwigia, 43:85. 24 Mar. 1904.

“Stromata stipitato-capitata, pallida, ceraceo-carnosa e sclerotio plantae virescentiae oriunda. Perithecia stromate immersa sub prominula. Asci cylindrati. Sporae filiformes, septatae.

“B. Orthocladae P. Henn. (= Claviceps pallida [Wint.] var. Orthocladae P. Henn. Hedw. 1900, p. 77.= Balansia didema A. Möll. Ascom. 1901, p. 197).

“Diese Arten können aber nicht gut zu Balanzia gestellt werden, weil das Stroma letzterer Gattung fast kohlig oder hornartig-hart, aussen schwarz berindet ist. Die Gattung Balansia Speg. gehört demnach besser zu den Dothideaceen neben Ophiothopsis und bildet hier eine Parallelgattung mit Balansiella und Cordiceps. Von letzterer Gattung ist Balansiella durch biologische Verhältnisse, so durch das an der lebenden Pflanze bereits die Askenfrüchte entwickelnde blasse, sehr abweichende Sclerotium, ferner durch die Conidienbildungen, die septierten Sporen u. s. w. verschieden. Es erscheint daher zweckmässiger, auf Grund dieser Unterschiede eine neue Gattung aufzustellen, da hierdurch der bestehenden Verwirrung Einhalt geboten werden dürfte.”

[Ascomycetae]

CHRYSOGLUTEN Briosi et Farneti *Pionnotes* Fr. ex parte, n. g. Chrysoglutaceae. Atti dell' Istituto Botanico dell' Università di Pavia, 8:117. 1904.

“Thallus udus gelatinosus, siccus crustaceus, nunquam frondosus nec laciniatus, generaliter aurantiacus; peritheciis aurantiis vel luteis; paraphysis nullis.”

[Ascomycetae]

CHRYSOGLUTENACEAE Briosi et Farneti n. fam. Lichenes. Atti dell' Istituto Botanico dell' Università di Pavia, 8:117. 1904.

“Thallus udus gelatinosus siccus crustaceus, nunquam frondosus nec laciniatus, generaliter aurantiacus; excipulum formatum e natura propria vel ab illa thalli diversa; peritheciis cum contextu pseudoparenchymatico aurantiaco vel luteo. Superficies thalli conidiophora.”

[Ascomycetae]

COCCODISCUS P. Hennings n. g. Soccoideaceae. Hedwigia, 43:144. 24 Mar. 1904.

"Stromata subcarnosa, discoideo-rotundata, inferne medio substipitato-affixa, atra. Perithecia immersa, globulosa; asci clavati, 8-spori, paraphysati. Sporae ovoideae, continuae, basi papillatae, fuscae.

C. quercicola, P. Henn. n. sp. . . ."

[Ascomycetae]

DEBARYELLA v. Höhnelt n. g. Hypocreaceae. Annales Mycologici, 2:274 5. Mai 1904.

"Es giebt einige Hypocreaceen, deren weisse oder hyaline Perithezien ganz in die leeren Hohlräume der Perithezien alter stromatischer Pyrenomyceten eingesenkt sind. Hierher gehört *Passerinula candida* Sacc., das in *Fenestella vestita* und *Valsaria instiva* lebt und einen langen cylindrischen, an der Spitze stark gekrümmten, weit vorragenden Hals besitzt und zweizellige braune Sporen hat.

"Ebenso verhält sich *Charonectria biparasitica* v. H., die in *Valsa flavovirens* lebt, keinen Schnabel und zweizellige hyaline Sporen besitzt. Sie unterscheidet sich von *Passerinula* auch durch den völligen Mangel der Paraphysen, und dürfte vielleicht besser in eine eigene Gattung gebracht werden (Mycol. Fragm. in Ann. Myc. 1903, p 395). Eine dritte, in der Lebensweise völlig gleiche, aber durch 4-zellige, ganz hyaline Sporen verschiedene Form, die ich in Erinnerung an meinen unvergesslichen Lehrer Anton de Bary: *Debaryella* nenne, fand ich in *Valsa scabrosa* parasitierend am Dachsbauberg in der Pfalzau (Wiener Wald, Mai 1903).

"*Debaryella hyalina* n. sp. hat hyaline bis sehr blass gelbliche, länglich eiförmige, ca. 200 μ hohe und 140 μ breite, kleinzellig-prosenchymatisch-dünnwandige Perithezien, die in einen 50-60 μ langen und 40 μ breiten, fast parallelfässerig gebauten Hals, der oben weit offen ist, verschmälert sind und, wie es scheint, stets einzeln in den leeren Perithezienhöhlen von *Valsa scabrosa* ganz eingesenkt sind, mit dem Schnabel kaum vorragend. Die Asci sind zahlreich, cylindrisch, oben abgerundet, dünnwandig, kurz gestielt, schief einreilig, 8 sporig, 130-160 x 10-12 μ gross. Paraphysen dünnfädig, bald verschleimend. Sporen hyalin, 4-zellig, mit 4 grossen Oeltropfen, dünnwandig, gerade oder kaum gekrümmt, spindelförmig, an den Enden meist stumpflich, 21-26 x 6-7 μ ."

[Ascomycetae]

ENGLERULACEAE P. Hennings n. fam. Ascomycetae. Hedwigia, 43:354. 3 Sept. 1904.

"Die Familie der Englerulaceae ist besonders durch die eigentümliche subanhyste, strukturlose Beschaffenheit des Gehäuses eigentümlich, dadurch von den Perisporiaceae, Hypo-

cretceae u. s. w. verschieden; den Uebergang aber zwischen diesen Gattungen vermittelnd."

[Ascomycetae]

GUILLIERMONDIA Boudier n. g. Myriangiaceae. Bulletin de la Société de France, 20:19. 25 Feb. 1904.

"Receptaculum minutissimum, rotundatum, nitens, 0.25 mm. ad 0.60 mm. latum, fimicolum, è pallidè-ochraceo atrum, membranâ tenui non cellulosa omnino circumdatum, intus tuberculo basali carnosio crasse hymenifero et gelatinâ spissâ immerso instructum. Paraphyses filiformes, thecas superantes et gelino immixtae. Thecae, numerosissimae, primo piriformes, dein rotundatae, pediculatae octosporae, crasse stipitatae, indehiscentes, sed facile diffuentes, et globulos sporarum liberos relinquentes. Sporae ellipticae, juniores hyalinae, dein fulvae denique maturae brunneo-purpureae, episporio ceraceo irregulariter verruculosae et mutuâ pressione angulosae, semper in globulum rotundatum conglutinatae, sed non sacculo inclusae. Gelatina spissa lutea, thecis avulsis cellulosa apparens."

[Ascomycetae]

HYPOXYLONOPSIS P. Hennings n. g. Dothidiaceae. Hedwigia, 43:256. 12 Juni 1904.

"Hypoxylonopsis P. Henn. n. gen.; stromata crasse pulvinata, tuberculata, sublignoso-coriacea, nigricantia; perithecia immersa ostiolata; asci cylindranei, 8-spori paraphysati; sporae ellipsoideae, 1-septatae, fuscae.

"Plowrightia et Dothidia affin. sed stromata diversa, Hypoxylone simillima."

[Ascomycetae]

KUSANOBOTRYS P. Hennings n. g. Perisporiaceae. Hedwigia, 43:141. 24 Mar. 1904.

"Perithecia in mycelio crustaceo atro, stromatico, superficialia, botryosa, subovoidea, membranacea, atra, basi setulis superantibus circumdatis. Asci ovoidei, 4-8-spori paraphysati. Sporae ovoideae 1-septatae, fuscae.

"K. Bambusae P. Henn. n. sp. . . .

"Ein höchst merkwürdiger Pilz, den ich vorläufig zu den Perisporiaceen stelle. Die traubig dicht gedrängten Perithezien, meist 5-10, entstehen aus einen oberflächlich mit aufrechten Borsten besetzten schwarzen Strome in rundlichen Flecken. Dieselben scheinen ein undeutliches Ostiolum zu besitzen."

[Ascomycetae]

MAURODOTHIS Sacc. et Syd. n. g. Dothideaceae. Annales Mycologici, 2:166. 15 Apr. 1904.

"Stromata superficialia vel subsuperficialia, minuta, disciformia, atra; loculi immersi. Asci octospori. Sporidia oblonga, 1-septata, colorata. A *Phacodothide*, cui sporidiis similis, differt stromate superficiali, disciformi.

"Maurodothis Alyxiae Sacc. et Syd. nov. spec. . . ."

[Ascomycetae]

METADOTHELLA P. Hennings n. g. Pseudophaciaceae. Hedwigia, 43:384. 3 Sept. 1904.

"Ascomata patelliformia, atra, per rimas stellatas epidermis erumpentia; asci clavati, 8-spori, paraphysati; sporae oblongae, 1-septatae, hyalino-brunneolae. Dothiorae et Metadothide affinis sed sporae 1-septatae, coloratae.

"M. stellata P. Henn. n. sp. . . .

"Ein merkwürdiger Pilz, dessen Ascomata aus sternförmig gestellten erhabenen Rissen hervorbrechen. Nach Rehms freudlicher Mitteilungen gehört derselbe in die Nähe von Dothiora Fr. oder Metadothis Sacc. Da die Sporen nur einseptiert, später gefärbt sind, so muss derselbe in ein neues Genus gestellt werden. (Hierzu Textfigur.)"

[Ascomycetae]

MICROCYLUS Saccardo n. g. Dothideaceae. Annales Mycologici, 2:165. 15 Apr. 1904.

"Stromata superficialia, minuta, disciformia, atra; loculi immersi. Asci octospori. Sporidia oblonga, 1-septata, hyalina. A *Dothidella* differt stromata superficiali, disciformi, saepius minuto.

"Microcylus angolensis Sacc. et Syd. nov. spec. . . .

"Unter *Microcylus* Sacc. sind die Arten der Gattung *Dothidella* mit hyalinen Sporen und oberflächlichen, scheibenförmigen Stromata zu vereinigen. Wir betrachten *M. angolensis* Sacc. et Syd. als den Typus der Gattung."

[Ascomycetae]

NEOREHMIA v. Höhnelt n. g. Perisporiaceae. Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe, Wien, III:988. 1902.

"Peritheciis sessilibus, liberis, globosis, subcarnosis, ex olivaceo nigrescentibus, pilis rigidis ornatis; ostiolo nullo vel obsoleto; paraphysis parvis; ascis clavatis, octosporis; sporidiis hyalinis, e cellulis binis, globosis, facile iamque ipso in asco se separantibus formatis."

"Neorehmia ist eine form, deren sichere Einreihung nicht geringe Schwierigkeiten bietet. Die neue Gattung zeigt verwandtschaft zu den Perisporiaceen, Hypocreaceen und Trichosphaeriaceen."

[Ascomycetae]

OPHIODOTHELLA P. Hennings n. subg. [Ophiodothis.] Dothidiaceae. Hedwigia, 43:258. 12 Juni 1904.

"Ophiodothis (Ophiodothella) atomaculans P. Henn. n. sp.

"Ich stelle diese Art, welche äusserlich der *O. Balansae* Speg. sehr ähnlich, von *O. Ulei* Rehm u. s. w. verschieden ist, vorläufig in obige Gattung in ein Subgenus Ophiodothella. Die meisten zumal Gräser bewohnenden Arten der Gattung besitzen cylindrische Asken, welche mit einem verdickten, oft kugelig abge-

rundeten, gefurchten Scheitel, wie bei *Cordiceps*, *Balansia*, etc., versehen sind. Bei dieser Art sind die Asken fusoid, ohne diese charakteristischen Köpfe. Dieses Merkmal ist anscheinend geringfügig, aber im Vergleich mit den betreffenden Gattungen der Hypocreaceen sowie *Balansia*, die Gräser bewohnenden *Ophiodothis*-Arten besonders hervorhebbar. Obiger Pilz bildet auf beiden Seiten der Blätter ausgebreitete schwarze krustige stromatische Überzüge, aus denen die kleinen hemisphärischen, fast kohligen schwarzen Stromata, welche meist nur ein Perithecium enthalten, herdenweise hervorbrechen. Diese Stromata wären vielleicht besser als Perithecieen zu bezeichnen."

[Ascomycetae]

OPHIOPELTIS d'Almeida et de Souza da Camara n. g. Microthyriaceae. Revista Agronomica, 1:175. May 1903.

"Perithecia submembranacea, dimidiato-scutata, superficialia, centro perforata; asci subcylindracei, aparaphysati, trispori; sporidia vermicularia, ascos subaequantia, multiguttata, hyalina.

"Ad *Microthyriaceas* accedit ob perithecia dimidiata, tanquam trispora asci videntur.

"*Ophiopeltis Oleae* n. sp. (Tab. x, fig. 8-10). . . ."

[Ascomycetae]

PARMULARIELLA P. Hennings n. g. Hysteriaceae. Hedwigia, 43:266. 12 Juni 1904.

"*Parmulariella* P. Henn. n. gen.; stromata superficialia dimidiatoscutellata; perithecia in stromate immersa, radiantia, rima longitudinaliter dehiscentia; asci ovoidei vel clavati, 8-spori; sporae oblonge clavatae, 1-dein 3-septatae, omnino hyalinae. *Parmularia* affin. simillimaque, sed sporis-hyalinis deinde 3-septatis."

[Ascomycetae]

PERISPORINA P. Henn. n. g. Perisporiaceae. Hedwigia, 43:357. 3 Sept. 1904.

"*Mycelium* arachnoideo-floccosum, hyalino-fuscum; perithecia subglobosa, membranacea astoma; asci ovoideo-clavati, 8-spori; sporae cylindraco-clavatae, 2-septatae, fuscae. *Meliolae*, *Perisporio* affin.

"*P. manaosensis* P. Henn. n. sp. . . .

"Ein höchst merkwürdiger Pilz, der mit *Meliola* gewisse Verwandtschaft hat, aber durch die clavaten Sporen, das eigenartige flockige, farblose, später schwärzliche Mycel nicht dazu gezogen werden kann."

[Ascomycetae]

PERISPORIOPSIS P. Hennings n. g. Perisporiaceae. Hedwigia, 43:83. 24 Mar. 1904.

"*Perithecia* ovoidea, perforata, membranacea subrata in mycelio fibroso, subcrustaceo maculiformi, fusco. Asci clavati, 8-spori aparaphysati. Sporae oblonge fusoideae 3-7-septatae, subhyalino-

flavescentiae. Perisporio affn. sed sporis subpallidis haud fatiscientiis."

"*P. Struthanthi* P. Henn. n. sp. . . ."

[Ascomycetae]

PERROTIA Boudier n. g. Pezizales. Bulletin de la Société de France, 17:24. 1901.

"Species minores, sessiles, pilosae primo clausae, dein out jove pluvio aperte. Receptaculum sessile, carnosum, extus pilis septatis, coloratis, granulosis vestitum; hymenio thecis clavatis, octosporis, operculatis, ad apicem obtusis, ad basim attenuatis; paraphysibus filiformibus, septatis, intus parce granulosis, ad apicem vix crassioribus, non acuminatis; sporis achrois, oblongis, hyalinis, rectis aut leniter curvulis, primo continuis, deinque medio uni-septatis."

[Ascomycetae]

PHAEODOTHIS Sydow n. g. Dothideaceae. Annales Mycologici, 2:166. 15 Apr. 1904.

"Stromata innata, effusa, subplana, atra; loculi immersi. Asci octospori. Sporidia oblonga, 1-septata, colorata.—A *Dothidea*, cui proxime accedit, differt sporidiis coloratis, nec hyalinis.

"*Phaeodothis Tricuspidis* Syd. nov. spec. . . .

"*Phaeodothis Tricuspis* repräsentiert gut den Typus dieser neuen Gattung."

[Ascomycetae]

PHAEOSCUTELLA P. Hennings, n. g. Microthyriaceae. Hedwigia, 43:382. 3 Sept. 1904.

"Perithecia subdimidiato-scutellata; tenue membranacea, subfibrosa, fuscidula pellucida, sine structura cellulosa; asci ellipsoidei vel ovoidei 8-spori aparaphysati; sporae parallelo-conglobatae, cylindraceae, pluriseptatae, fuscae.

"*Ph. Gynerii* P. Henn. n. sp. . . .

"Ein durch die völlig strukturlose, dünnhäutige Beschaffenheit der Perithezien völlig abweichender Pilz, den ich mit Bedenken zu den Microthyriaceen stelle, aber durch andere Merkmale gehört er am besten hierher. Die dünnhäutigen, fast durchscheinenden, schmutzig bräunlichen Perithezien sind von dunkleren Hyphen durchsetzt, an denen sich häufig fusoid braune, 3-5-septierte Conidien bilden, doch kommen auch eiförmige, 1-septierte Conidien vor. Ob die Hyphen und Conidien dem Pilze angehören, lässt sich nicht sicher feststellen, möglicherweise gehören diese verschiedenartigen anderen Pilzen an. Die Asken liegen oft ziemlich regellos im Perithecium und sind unter dem Mikroskope durchscheinend. (Tafel V. Fig. 6.) (Hierzu Textfigur.)"

[Ascomycetae]

PICHIA E. Chr. Hansen n. g. Saccharomycetae. Centralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten, Zweite Abteilung, 12:538. 19 Aug. 1904.

"Spore halbkugelförmig oder unregelmässig und ackig. Keine Gärung; starke Mycelbildung.

"*Pichia membranaefaciens* (Syn. *Sacch. membranaefaciens* E. Chr. Hansen). Ebenfalls einige von Pichi beschriebenen Arten. Zu dieser Gattung gehören wahrscheinlich auch Lindners zwei Arten: *Saccharomyces hyalosporus* und *Sacch. farinosus*."

[Ascomycetae]

REHMIOMYCES P. Hennings n. g. Bulgariaceae. Hedwigia, 43:270. 12 Juni 1904.

"*Rehmiomyces* P. Henn. n. gen. Ascomata erumpente superficialia, subtremellosa sicco cornea, atra, primo subgloboso-clausa, dein cupulata convexo-explanata. Asci clavati, octospori, paraphysati. Sporae ovoideae, primo medio 1-septatae dein pluriseptatae muraliae, hyalinae."

[Ascomycetae]

RHYNCHONECTRIA v. Höhnelt n. g. Nectriaceae. Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe, Wien, 111:1023. 1902.

"*Peritheciis superficialibus, carnosus, pallidis vel laete coloratis, elongatis, ostiolo acute terminatis; ascis 4-8-sporis; sporidiis hyalinis, fusiformibus, uniseptatis, utrinque ciliatis.*

"Species unica: *Rh. longispora* (Phill. et Ploror.) v. H., Kings Lynn Britanniae, v. *Grevillea* XIII, p. 78."

[Ascomycetae]

RICKIELLA Sydow n. g. Cyttariaceae. Annales Mycologici, 2:244. Mai 1904.

"*Rickiella* Syd. nov. gen. in litt.

"Pileo convexo, carnosus, subcartilagineo, substipitato, turbinato; disco obtuse marginato, hymenifero; inferne canalibus et labyrinthis fenestrato, totam massam subiculi crassi, carnosi interiorius exteriusque percurrentibus. Asci cylindrici. Sporae ovoides, uniloculares. Paraphyses ut in *Eupezizeis*.

"Est quasi *Clathracea* ascogena. A *Cyttaria* differt disco nunquam poroso et hymenio ad discum restricto. Ab *Acetabula* tota structura clathri distinguitur. *Berggrenia* Cooke videtur similis, sed est incerta, nec ejus descriptio quadrat.

"Das Genus gehört zur Familie der Cyttariaceen und stellt nicht undeutlich den Uebergang von den Eupezizeen zu den Cyttariaceen dar (unde nomen *transiens*). Auch pflanzengeographische Bedeutung kommt dem Funde zu. Die Cyttariaceen gehören der antarktischen Zone an und reichen nicht herauf bis nach Brasilien. Klimatische Verhältnisse mögen dazu beitragen haben, *Rickiella* und *Cyttaria* zu zwei gut getrennten Gattungen, die eine als Form der subtropischen, die andere als Typus der antarktischen Zone auszubilden. Wirklich gelatinös ist das Fleisch nicht und das Genus gehört daher nicht zu den Bulgariaceen."

[Ascomycetae]

SACCARDOMYCES P. Hennings n. g. Englerulaceae. Hedwigia, 43:353. 3 Sept. 1904.

"Perithecia superficialia, minutissima, subovoidea, contextu tenui membranacea, subanhysta, hyphis radiatis-composita, pallido-fusculula, poro paraphysibus tenuissime filiformibus; asci subfusoides, 8-spori, paraphysati; sporae aciculari-filiformes, hyalinae, continuae. Hyalodermate, Globulinae et Englerulae aff.

"S. socius P. Henn. n. sp. . . ."

"S. bactridicola P. Henn. n. sp. . . ."

[Ascomycetae]

SACCHAROMYCODES E. Chr. Hansen n. g. Saccharomycetae. Centralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten, Zweite Abteilung, 12:537. 19 Aug. 1904.

"Durch die Keimung der mit 1 Membran versehenen Sporen entwickelt sich ein Promycelium. Von diesem sowie von den vegetativen Zellen findet eine Sprossung mit unvollständiger Abschnürung statt. Mycelbildung mit deutlichen Querwänden.

"Zwei Arten sind bekannt, nämlich, der im vorhergehenden erwähnte Saccharomycodes Ludwigii (Syn. Saccharomyces Ludwigii E. Chr. Hansen) und eine andere Art, von welcher Behrens in der Wochenschr. f. Brauerei, 1896, p. 850 eine ausführliche und eingehende Beschreibung gibt, doch ohne einen systematischen Namen daran zu knüpfen."

[Ascomycetae]

SEURATIA Patouillard n. g. Capnodiaceae. Bulletin de la Société Mycologique de France, 20:136. 20 July 1904.

"Biogena. Subiculum nullum. Perithecia sicca rigida, humida gelatinoso-mollia, sessilia, varie ramosa, ex hyphis subhyalinis moniliformibus composita, rima laterali dehiscentia; asci suboctospori; sporidia uniseptata, hyalina.

"S. coffeicola. . . ."

"Genre de la famille des Capnodiacés, se séparant des similaires par l'absence de mycélium superficiel, par la consistance gélatineuse et par sa déhiscence toute particulière. A la face supérieure de chaque rameau du périthèce et non à l'extrémité, se forme une crevasse longitudinale, dont les bords se relèvent, laissant une large ouverture hystéroïde béante. La trame du périthèce est composée d'articles séparés, pyriformes ou ovoïdes, gélatineux, incolores dans les parties profondes et brunâtres au voisinage de la surface."

[Ascomycetae.]

SORICA Giesenhagen n. g. Xylariae. Berichte der Deutschen Botanischen Gesellschaft, 22:195. 1904.

"Fruchtkörper aus einem zylindrischen stromaartigen Stiel gebildet, der an der Spitze ein einziges Perithecium mit schnabelartig verlängerten Hals trägt. Gehäuse derb, trocken fast hornartig; Schläuche langstielig keulenförmig, mit acht kugelligen

einzelligen braunen Sporen. Als Nebenfruchtformen treten Pykniden und freie konidienbildende Stielzellen auf. Oberflächlich auf lebenden Pflanzen schmarotzend."

[Ascomycetae.]

STICTOCLYPEOLUM Rehm n. g. Mollisiaceae. Hedwigia, 44:9. 29 Okt. 1904.

"Apothecia in mycelio membranaceo tenuissimo sessilia, primitus lata basi conoidea, poro minutissimo pertusa, dein hemiglobosa, disco urceolato, excipulo crasso, glabro, laterali parenchymatice contexto, hypothecio hyalino. Asci clavati, 8-spori. Sporae fusiformes, medio septatae, hyalinae, distichae. Paraphyses versus apicem ramosae.

"(Die jungen Apothecien machen den Eindruck eines Clypeolum mit winzigem Porus, die entwickelten sehen Stictisähnlich aus. Das Gehäuse zeigt seitlich sich deutlich entwickelt, während es am Grund nur als farbloses Hypothecium zu erkennen ist. Nach seiner endlichen Ausbildung kann der Pilz nur bei den Mollisieen untergebracht werden und steht der Gattung Pazschkea zunächst, unterscheidet sich aber völlig durch seinen Gehäusebau.)"

[Ascomycetae.]

TRICHOPHYMA Rehm n. g. Myriangiales. Hedwigia, 44:7. 29 Okt. 1904.

"Mycelium microthyrioideum e vittis tenellis centrifugis radiatim prosenchymatice contextum, hyalinum, pilis hyalinis septatis longis obsessum. Perithecia sparsa, plerumque solitaria, tubercula minutissima, membrana, tenuissima oblecta. Asci globosi dispersi in strato hyalino, 8-spori. Sporae oblongae, 3-septatae, demum muriformiter divisae, hyalinae.

"(Steht zunächst Leptophyma im Bau des Perithecium.)"

[Ascomycetae.]

ULEOPELTIS P. Hennings n. g. Hysteriaceae. Hedwigia, 43:267. 12 Juni 1904.

"Uleopeltis P. Henn. n. gen.; stromata superficialia, dimidiata-scutellata, subcarbonacea, atra; perithecia in stromate immersa, rima subcirculariter dehiscencia; asci clavati, 8-spori, paraphysati; sporae oblonge fusoideae vel lineares, hyaline, pluriseptatae."

[Ascomycetae]

UNCINULITES Pampaloni n. g. Erysipheae. Atti della Reale Accademia Dei Lincei, Rome, 299:250-251. 1902.

"*Uncinulites Baccarini* Pampaloni.

"Perithecia subglobosa, tenui membranacea, nigra, astoma, 30-35 μ , appendicibus, 18-25 cm. longis, apice uncinatis, perithecium fere aequantibus, indivisis, ad apicem fuscis ad basim atris."

[Ascomycetae.]

WILLIA E. Chr. Hansen n. g. Saccharomycetae. Centralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten, Zweite Abteilung, 12:538. 19 Aug. 1904.

"Spore hut- oder zitronenförmig mit stark hervorspringender Leiste. Die meisten Arten sind kräftige Esterbildner, einige wenige rufen keine Gärung hervor.

"Willia anomala (Syn. Sacch. anomalus E. Chr. Hansen). Willia Saturnus (Syn. Sacch. Saturnus Klöcker). Ebenfalls die von Steuber in der Zeitschr. f. d. ges. Brauwesen, 1900, beschriebenen Arten und Varietäten."

[Ascomycetae.]

YOSHINAGAIA P. Hennings n. g. Coccoideaceae. Hedwigia, 43:143. 24 Mar. 1904.

"Stromata subcarnosa cornea, disciformi-pulvinata erumpenti-superficialia, medio substipitato-affixa, atra. Perithecia immersa, globulosa, subverruciformiostiolata. Asci octospori, paraphysati. Sporae fusioideae, hyalinae, 1-septatae."

"Y. Quercus P. Henn. n. sp. . . ."

[Ascomycetae.]

ZUKALIOPSIS P. Hennings n. g. Perisporiaceae. Hedwigia, 43:367. 3 Sept. 1904.

"Perithecia superficialia, mycelio effuso fusco circumdata, submembranacea, atra, subastoma; asci subovoidei, 8-spori; sporae cylindraceo-oblongae vel clavatae, pluriseptatae, muraliae, hyalinae. Zukaliae affin. sed sporae muraliodivisae.

"Z. amazonica P. Henn. n. sp. . . ."

"Die Perithezien treten meist auf der Oberseite der Blätter punktförmig auf, diese oft völlig bedeckend. Die meisten derselben sind leider unreif. Mit Zukalia hat der Pilz grosse Ähnlichkeit, ist aber durch die mauerförmig geteilten Sporen nach dem Saccardo'schen System zu den Hyalodictyae der Perisporiaceen zu stellen."

[Ascomycetae.]

ZYGOSACCHAROMYCES Barker n. g. Saccharomycetae. Centralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten, Zweite Abteilung, 12:537. 19 Aug. 1904. [Proposed as a new genus by Barker in Philosophical Transactions of the Royal Society of London, Ser. B. 194:467-485, 1891, but no species named, hence not there technically described.]

"Zeichnet sich durch eine Kopulation der Zellen aus, stimmt übrigens mit der vorhergehenden Gattung [Saccharomyces] überein.

"Hierher gehört die von Barker beschriebene Art."

[Aecidiomycetae.]

PHAEOTRIPHFRAGMIUM Milesi et Traverso n. sect. sub. Triphragmium. Annales Mycologici, 2:145. 15 Apr. 1904.

"Armata. Teleutosporeae umbrino-fuligineae."

[Aecidiomycetae.]

XANTHOTRIPHAGMIUM Milesi et Traverso n. sect. sub Triphragmium. *Annales Mycologici*, 2:145. 15 Apr. 1904.

"Inermia. Teleutosporeae luteo-ferrugineae."

[Basidiomycetae]

ABORTIPORUS Murrill n. g. Polyporaceae. *Bulletin of the Torrey Botanical Club*, 31:421. Aug. 1904.

"Hymenophore annual, tough, humus-loving; stipe normally central, often obsolete; context yellowish-white, duplex, spongy above, woody below, tubes thin-walled, mouths polygonal; spores subglobose, smooth, hyaline.

"The type of this genus is *Boletus distortus* Schw. (Syn. Fung. Car. 71. 1818), a very variable species found about old stumps in various localities in the Eastern United States. The name assigned to the genus refers to the usual aborted form of the fruit body, in which the tubes with their abundant contents appear prematurely before the development of the pileus is complete."

[Basidiomycetae]

COLTRICIELLA Murrill n. g. Polyporaceae. *Bulletin of the Torrey Botanical Club*, 31:348. June 1904.

"Hymenophore small, annual, tough, epixylous; stipe attached to the vertex of the pileus; surface of the pileus anoderm, zonate; context spongy, fibrous, ferruginous, tubes angular, one-layered, dissepiments thin; spores ellipsoidal, smooth, ferruginous.

"The type of this genus is *Polyporus dependens* B. & C., a very rare plant found thus far only on dead pine logs in South Carolina and New Jersey. In some ways it resembles the genus *Porodiscus*, the species of both being small and epixylous with vertically attached stipes, but the two genera are very distinct as regards more important characters, such as the structure of the context and spores. From *Coltricia*, its nearest ally, the present genus differs chiefly in being uniformly epixylous and in having a pendant vertically-attached pileus. The name I have chosen refers to its general resemblance to *Coltricia*, this resemblance being best seen in *Coltricia cinnamomea*, which grows very frequently on wood in a state of advanced decay. Only one species is known."

[Basidiomycetae]

CYCLOMYCETELLA Murrill n. g. Polyporaceae. *Bulletin of the Torrey Botanical Club*, 31:422. Aug. 1904.

"Hymenophore annual, tough, epixylous, sessile, anoderm, zonate; context thin, fibrous, brown, tubes short, thin-walled, mouths polygonal, becoming concentrically elongated in some species by the splitting of the radial walls; spores ellipsoidal, smooth, ferruginous.

"This genus is based upon *Boletus pavonius* Hook. (Kunth, Syn. Pl. 1:10. 1822), described from Colombia. Its nearest ally is the old-world genus *Cyclomyces*, erected by Fries in 1830 upon *Cyclomyces fuscus*. In this latter genus the tubes are continuous concentric furrows, while in the species of *Cyclomyces-tella* which come nearest to *Cyclomyces* the concentric appearance of the hymenium is caused by the partial splitting of the radial walls in age; and the formation of furrows is by no means constant."

[Basidiomycetae]

CYCLOPORUS Murrill n. g. Polyporaceae. Bulletin of the Torrey Botanical Club, 31:423. Aug. 1904.

"Hymenophore annual, tough, anoderm, terrestrial, orbicular, centrally stipitate; context soft, spongy, ferruginous; pores at first polygonal, soon becoming continuous concentric furrows, dissepiments thin, lamelloid; spores ovoid, smooth, ferruginous.

"The type of the genus is *Cyclomyces Greenei* Berk. (Lond. Journ. Bot. 4:306, pl. II. 1845), a very rare plant found in temperate regions of North America. The genus *Cycloporus* differs widely from *Cyclomyces* in being terrestrial and stipitate instead of epixylous and sessile."

[Basidiomycetae]

EICHLERIELLA Bresadola n. g. Tremellaceae. Annales Mycologici, 1:115. 31 Mar. 1903.

"Fungi membranaceo-ceracei vel membranaceo-subgelatinosi, cupulares vel plano-concavi, raro penduli. Hymenium typice superum, discoideum, tantum in formis pendulis inferum, laeve vel subrugulosum. Basidia globoso-ovoidea, cruciatim partita, 2-4-sterigmatica. Sporae hyalinae, cylindratae, subcurvulae.

"Est *Stereum* vel *Cyphella* frutificatione tremellacea.

"Genus cl. B. Eichler jure meritoque dicatum.

"*Eichleriella incarnata* Bres. n. sp. (Tab. III, fig. 1)."

[Basidiomycetae]

GLOBOFOMES Murrill n. g. Polyporaceae. Bulletin of the Torrey Botanical Club, 31:424. Aug. 1904.

"Hymenophore large, woody, encrusted, perennial, epixylous, compound; context ferruginous, punky, tubes cylindrical, thick-walled, stratose; spores ovoid, smooth, ferruginous.

"The type of this genus is *Boletus graveolens* Schw. (Syn. Fung. Car. 71. 1818), a rather rare plant first found in Georgia and the Carolinas, but later discovered as far west as Iowa. The genus is readily distinguished among its allies by its compound pileus, which consists of numerous small, closely imbricated pileoli united into a compact rounded mass.

"The genus *Xylophilus* of Karsten (Hattsv. 2:69. 1882), is also described as having a compound pileus, but *Xylophilus crassus* (Fr.) Karst., its type species, is very probably only an abnor-

mal form of a European species of *Elfvigia*; and even if this type plant were found to be normal the genus *Globifomes* would remain sufficiently distinct."

[Basidiomycetae]

KLASTOPSORA Dietel n. g. Melampsoraceae. Annales Mycologici, 2:26. Jan. 1904.

"Sori teleutosporiferi primum plani ceracei (ut in genere Coleosporio), maturati hemisphaerici, pulverulenti, epidermide diu tecti, denique ea fissa cincti. Teleutosporae catenulatae, simplices. Catenae sporarum immaturarum conglutinatae, maturarum facile disjunctae, fragiles."

[Basidiomycetae]

KORDYANELLA v. Höhnelt n. g. Hymenomycetae. Annales Mycologici, 2:273-4. Mai 1904.

"Der Pilz, *Kordyanella austriaca* n. g. et. sp., bildet 30-60 μ breite, halbkugelige oder flachwarzenförmige Körperchen, die oberflächlich hyalin sind, innen jedoch sehr blass bräunlich gefärbt erscheinen. Auf einem rundlichen, fast halbkugelichen, aus bräunlichen Zellen von 2-2½ μ Diameter, die in wenigen Lagen stehen, bestehenden Gewebskörper sitzen dicht radial angeordnet farblose, mit meist 2-3 (selten 4) Sterigmen versehene Basidien. Diese sind 8-13 μ lang und ca. 2 μ breit, unten sehr schwach erweitert und unterhalb der Sterigmen wenig verschmälert, wodurch sie eine eigentümliche, fast gestreckt flaschenförmige Gestalt annehmen. Die Sterigmen sind sehr dünn, scharf spitzig, steif, wenig divergierend abstehend, seltener schwach gegeneinander gebogen. Die reichlich entwickelten Sporen sind hyalin, länglich bis kurz stäbchenförmig, 2½-4 \times 1 μ . Vegetative Hyphen auf der Holzoberfläche, die sicher zu dem Pilze gehörten, konnte ich nicht finden.

"Der Pilz ist offenbar mit *Kordyana* nahe verwandt. Er unterscheidet sich nicht bloss durch seine saprophytische Lebensweise, sondern auch durch Abweichungen im Baue von den beiden *Kordyana*-Arten Raciborski's, welche auf Blättern schmarotzen. *Kordyana Tradescantiae* (Pat.) Rac. hat zwischen den Basidien sterile Hyphen, und *K. Pinangae* Rac. ein nur aus Zeugiten bestehendes Hymenium, aus welchen Zeugiten ohne Abtrennung durch eine Querwand die 2 Sterigmen tragenden Basidien getrieben werden. Es stellen diese 2 Arten offenbar 2 verschiedene Genera dar, von welchen *Kordyanella* verschieden ist."

[Basidiomycetae]

LAETIPORUS Murrill n. g. Polyporaceae. Bull Torr. Bot. Club, 31:607. Nov. 1904.

"Hymenophore annual, epixylous, fleshy, anoderm, caespitosemultiplex; context cheesy to fragile, light-colored, tubes thin-walled, fragile, bright yellow, mouths irregularly polygonal; spores smooth, hyaline.

"This genus is based on *Agaricus speciosus* Batarr. Fung. Hist. 68, pl. 34. f. B. 1755, commonly known as *Polyporus sulphureus* Fr. It may be at once distinguished from species of *Grifola* by its yellow color and arboreal habit. The generic name chosen refers to the brilliantly colored hymenium."

[Basidiomycetae]

LENTODIOPSIS Fr. Bubàk n. g. Agaricaceae. Hedwigia, 43:196. 16 Mai 1904.

"Lentodiopsis n. g. Fruchtkörper zähfleischig, fast lederartig, dauerhaft, eintrocknend. Hut in den Stiel übergehend, zentral gestielt. Lamellen schmal, zähe, weit herablaufend, unten zellenförmige Anastomosen bildend. Schleier ringförmig am Stiele sich ablösend oder strahlenförmig aufreissend. Sporen zylindrisch, hyalin.

"Lentodiopsis albida n. sp. . . ."

[Basidiomycetae]

MYCELIOSTROMA P. Hennings n. subg. [Geaster.] Lycoperdaceae. Hedwigia, 43:185. 16 Mai 1904.

"G. (Myceliostroma) jurensis P. Henn. n. sp.

"Die Art ist mit *G. stipitatus* Solms, sowie mit *G. mirabilis* Mont. verwandt, von beiden Arten völlig verschieden. Die mehr oder weniger gestielten, im geschlossenen Zustande an Lycoperdon piriforme erinnernden Fruchtkörper gehen aus einem den Erdboden überziehenden, weit ausgebreiteten, lederig-häutigen Mycel hervor, sie entstehen nebst erstgenannten Arten nicht unterirdisch, wie die übrigen Geaster. Auf Grund dieser Eigentümlichkeit ist eine besondere Untergattung, die ich als "*Myceliostroma*" bezeichne, da das Mycel stromaähnlich ist, aufzustellen. Von *G. stipitatus* Solms ist die Art besonders auch durch die um die Hälfte kleineren Sporen völlig verschieden."

[Basidiomycetae]

NIGROFOMES Murrill n. g. Polyporaceae. Bulletin of the Torrey Botanical Club, 31:425. Aug. 1904.

"Hymenophore large, perennial, epixylous, sessile; context woody, purple, tubes cylindrical, stratose, thick-walled, black; spores ovoid, smooth, hyaline.

"The type of this genus is *Polyporus melanoporus* Mont. (Pl. Cell. Cuba, 422. 1842), found on trunks of trees in tropical America. The genus is readily distinguished from its near allies by its purple context and black tubes."

[Basidiomycetae]

PHYLLOPORIA Murrill n. g. Polyporaceae. Torrey, 4:141. Sept. 1904.

"Hymenophore small, tough, annual, attached by the vertex to the lower surface of living leaves; context brown, fibrous, tubes thin-walled, mouths polygonal; spores globose, smooth, pale ferruginous.

"The distinguishing feature of this genus is its habit of growing upon living leaves. It is based upon the following species:

"*Phylloporia parasitica* sp. nov." . . .

[Basidiomycetae]

POGONOMYCES Murrill n. g. Polyporaceae. Bull. Torr. Bot. Club, 31:609. Nov. 1904.

"Hymenophore annual, epixylous, dimidiate-sessile to flabelliform, thickly covered with rigid hairs; context dark-brown, punky, tubes short, thick-walled, mouths small, circular; spores smooth, hyaline.

"This genus is founded upon *Boletus hydroides* Sw. (Prodr. 149. 1788), described from Jamaica. It may at once be distinguished from *Trichaptum* by its small, cylindrical, very thick-walled tubes. The name selected refers to its thick covering of bristly hairs."

[Basidiomycetae]

PORONIDULUS Murrill n. g. Polyporaceae. Bulletin of the Torrey Botanical Club, 31:425. Aug. 1904.

"Hymenophore annual, tough, sessile, epixylous, at first sterile and cup-like, the fertile portion developing from the sterile; context white, fibrous, tubes short, thin-walled, mouths polygonal; spores ellipsoidal, smooth, hyaline.

"The type of this genus is *Boletus conchifer* Schw. (Syn. Fung. Car. 1818), a very common and abundant species on dead elm branches. The development of the fruit-body is peculiar, being in two stages, the first ending with the formation of a cup-shaped sterile body, from which the fruit-body proper later develops. This preliminary pileus begins as a knot of whitish mycelium, which soon ceases to grow at the center, while the hyaline borders continue to grow upward and form a cup resembling species of *Nidularia*. The margin of the cup is thin and entire or undulate and becomes darker like the center when the limit of growth is reached, while the concentric zones within very plainly show the progress of the development. The cup varies from deeply infundibuliform to shallow or even flat at times and the central portion which has ceased to grow is much cracked radially to accommodate itself to the growing exterior.

"The pileus proper usually arises from one side of the cup near its base and expands laterally into reniform, zonate hymenophore considerably larger than the sterile portion. At times the pileus does not develop beyond the surface of the cup and at other times a developed pileus becomes proliferous at several points and give rise to new sterile and sterile portions. Since the formation of the cups continues throughout the growing season, many are overtaken by winter and are found among the new ones the following spring. The old pilei rarely remain over winter, being fragile and readily devoured by insect larvae."

[Basidiomycetae]

PSEUDOHYDNUM Rick n. g. Hymenomycetae. Ann. Mycol. 2:409. Sept. 1904.

"Pseudohydnum guepiniioides Rick nov. gen. nov. spec.

"Omnia se habent sicut in Hydno, exceptis contextu, qui est gelatinosus et dentibus, qui sunt egregie separabiles et deter-siles a trama.

"Die Diagnose der Art ist: . . .

"*Gloeoporus*, *Boletus* und *Pseudohydnum* bilden eine Reihe von Gattungen, die sich hauptsächlich durch leichte Trennbarkeit der Hymeniumschicht von *Polyporus*, *Agaricus* und *Hydnum* unterscheiden. Die Berechtigung von *Pseudohydnum* ist nicht grösser und nicht geringer, als die von *Gloeoporus*. Die Stacheln von *Pseudohydnum* sind so leicht angeheftet, dass es genügt, mit dem Finger leise über die Fruchtschicht zu fahren, um sie sofort alle nicht abzubrechen (was bei *Hydnum* oft auch der Fall ist), sondern abzuheben. Ich hatte die Art in Alkohol gelegt. Auf dem Heimtritt von der Exkursion waren bereits alle Stacheln abgewachsen. Mit regem Interesse studierte ich die Fruchtschicht, da ich glaubte, ein *Tremellodon* vor mir zu haben, allein die Basidien sind nicht die eines Protobasidiomyceten."

[Basidiomycetae]

PYROPOLYPORUS Murrill n. n. Bulletin of the Torrey Botanical Club, 30:109. 28 Feb. 1903.

"The genus *Pyropolyporus*.

"The European species of this genus were first separated into a distinct generic group by Quélet in his "Enchiridion Fungorum" published in 1886. His genus *Phellinus* established at that time contained four species, *P. ignarius* (L.), *P. fulvus* (Scop.), *P. conchatus* (Pers.), and *P. salicinus* (Pers.), and was characterized as follows: "Pileus velvety, persisting; context corky; pores small, fulvus brown; spores ovoid, fulvous. Plants lignatile." The name *Phellinus*, however, is preoccupied by *Phelline* assigned in 1826 to a genus of the Ebenaceae. The new name *Pyropolyporus* here proposed refers to the use of some species of this group in ancient times for the purpose of keeping fire."

[Basidiomycetae]

ROMELLIA Murrill n. g. Polyporaceae. Bulletin of the Torrey Botanical Club, 31:338. June 1904.

"Hymenophore large, irregular, annual, spongy to corky, epixylous; stipe simple, variously attached, surface of pileus anoderm hispid; context ferruginous, tubes irregular, thin-walled, spores ellipsoidal, smooth, hyaline, cystidia none.

"The type of this genus is *Boletus sistotremoides* Alb. & Schw., better known as *Polyporus Schweinitzii* Fr. The plant is a large and striking one, quite common in Europe and

America, and has figured under several genera since it was first described as a *Boletus*. Soon after being transferred to *Polyporus*, it was assigned to *Daedalea* because of its irregular pores, then to *Polystictus* because it seemed nearly allied to *P. perennis*. Quélet, however, overlooked this relationship and classified it under *Cladomeris* with *Polyporus frondosus*, *P. imberbis*, etc., largely on account of its hyaline spores. The species may be easily confused in some of its forms with *Polyporus hispidus*, but its normal form is stipitate, while *P. hispidus* is always dimidiate and the spores of the former are hyaline while those of the latter are of a deep golden hue. From the genus *Coltricia*, apparently its nearest ally, it differs in having hyaline spores, a more spongy context, differently colored tubes and a very variable stipe."

[Basidiomycetae]

TRICHAPTUM Murrill n. g. Polyporaceae. Bull. Torr. Bot. Club, 31:608. Nov. 1904.

"Hymenophore annual, epixylous, sessile, dimidiate; context brown, firm and leathery below, very loosely fibrous and darker above; tubes short, thin-walled, mouths polygonal, becoming labyrinthiform; spores smooth, hyaline.

"The type of this genus is *Polyporus trichomallus* Berk. & Mont. (Ann. Sci. Nat. III. II:238. 1849), described from Guiana. It resembles the old-world genus *Funalia* erected by Patouillard in 1900 with *P. monsveneris* Jungh., *P. leoninus* Kl. and *P. funalis* Fr. as typical species and *P. trichomallus* Berk. & Mont. in a subsection; but it may be easily distinguished from *Funalia* by its darker context and daedaleoid hymenium. While splitting often occurs, rendering the hymenium irpiciform, the splitting is not so radical as in *Funalia*. The name chosen refers to the loosely woven context."

[Deuteromycetes]

AMPHICHAETA McAlpine n. g. Melanconiales. Proceedings of the Linnean Society of New South Wales, 29:118. 1904.

"Acervuli beneath the epidermis, often erumpent, disc- or cushion-shaped, black. Sporules elongated, with two or more transverse septa, at least partially coloured, and with one seta at each end; basidia hyaline filiform."

[Deuteromycetes]

AMPULLARIA Annie Lorrain Smith n. g. Nectrioidaceae. Journal of Botany, 41:258. Aug. 1903.

"Perithecia growing singly, bright-coloured, globose with a long ostiole, formed of delicate cells; spores ovate, dark-coloured when mature.

"*A. aurea*, sp. unica. . . .

"The fungus corresponds with *Sphaeronemella* among the hyalinespored *Nectrioidaceae*. The only genus under *Nectrioidaceae-Zythideae-Phaesospora*, following Lindau's arrangement,

is *Martinella*, which forms a stroma. *Ampullaria*, with its simple perithecium stands so far by itself. It is probably the pycnidial form of one of the *Hypocreaceae*. The name was suggested by its resemblance to a flask."

[Deuteromycetes]

ATRACTINA v. Höhnelt n. g. Hyphomyc. dematicae phragmosp. Hedwigia, 43:298. 12 Juni 1904.

"Sterile Hyphen bräunlich sehr zart, im Substrate kriechend. Fertile Hyphen dunkel gefärbt, einfach, an der Spitze mit einigen parallel angewachsenen kurzen Seitenzweigen penicilliumartig verzweigt. Zweige 1-2 mal geteilt, an der Spitze einzelstehende, längliche, quer geteilte Sporen, die durch Schleim zu einem Köpfchen verbunden sind, tragend. Saprophyt."

[Deuteromycetes]

BACTRIDIOPSIS P. Hennings n. g. Tuberculariaceae. Hedwigia, 43:397. 3 Sept. 1904.

"Sporodochia superficialia pulvinata, subceracea; conidia ellipsoidea vel ovoidea, continua, acrogena, magna; conidiophora hyalina teretia. Batridio aff. sed conidia continua.

"B. Ulei P. Henn. n. sp. . . .

"Der Pilz hat mit Batridium flavum K et Sch. öusserlich überraschende Aehnlichkeit, ebenso durch die sehr grossen Conidien, welche aber niemals geteilt sind. (Hierzu Textfigur.)"

[Deuteromycetes]

CERCOSPORITES Salmon n. g. Hyphomycetae. Journal of Botany, 41:127. Apr. 1903. [Fossil fungus.]

"Cercosporites sp. Hyphae myceliales filamentosae singulatim repentes dilute brunneae septatae 5-8 μ diam. hinc inde in cellulas magnas 15-23 μ diam. maturitate opacas atro-brunneas plus minus globosas 3-6-catenulatas vel raro biserialim aggregatas probabiliter pro sclerotiis habendas subito inflatae."

[Deuteromycetae]

CICINNOBELLA P. Hennings n. g. Sphaeropsidaceae. Hedwigia, 43:386. 3 Sept. 1904.

"Perithecia superficialia, ovoidea membranacea, pallido-fuscidula, apice pertusa in hyphis Parodiellae parasitica; conidia subovoidea, flavido-fuscidula, subcirrhose expulsa.

"C. parodiellicola P. Henn. n. sp. . . .

"Der Pilz ist von Cincinnobolus Ehrenb. hervorragend durch die genfärbten Conidien sowie durch eigenes Mycel unterschieden. (Hierzu Textfigur.)"

[Deuteromycetae]

COLLETOTRICHOPSIS Fr. Bubák n. g. Melanconiaceae. Oesterreichische Botanische Zeitschrift, 54:184. Mai 1904.

"Durch die Lage der Borsten, die hier als eine Pyknidenwand fungieren, weicht der vorliegende Pilz von der Gattung *Colletot-*

trichum weit ab und es wäre wohl angemessener, für denselben eine neue Gattung *Colletotrichopsis* aufzustellen. Es müsste denn der brasilianische Pilz *Colletotrichopsis Pyri* (Noack) Bubák, der aus Tirol stammende *C. Pyri* (Noack) Bubak forma *tirolensis* Bubak genannt werden.

“Die Gattungsdiagnose ist dann folgende: *Colletotrichopsis* Bubák n. g. Fruchtlager linsenförmig, eingesenkt, von einer Reihe angedrückter, strahlenförmig vom Rande zur Mitte verlaufender Borsten bedeckt. Sporen einzellig, hyalin bis schwach rosenrot auf deutlich entwickelten Trägern stehend.”

[Deuteromycetae]

CONIOSCYPHA v. Höhnelt n. g. Dematiaceae. Annales Mycologici, 2:58. Jan. 1904.

“Hyphis subtilibus, hyalinis vel subhyalinis, ramosis, matrici arcte adnatis, vesiculas hyalinas, breve stipitatas gerentibus; vesiculis conidia solitaria, continua, fuliginea demumque ex earum apice exsiliencia includentibus.”

[Deuteromycetae]

CORYMBOMYCES Appel and Strunk n. g. Mucedinaceae. Centr. Bak. Parasit. Infektionskr. 2 Abt. 11:633. Mar. 1904.

“Hyphen kriechend; Konidienträger aufrecht, trugdoldenartig verzweigt; Konidien hyalin, ellipsoidisch, am Ende der Träger in Köpfchen stehend, verklebt.

“*C. albus* n. sp. . . .

“Im System gehört unser Pilz zu den Hyphomycetes-Mucedinaceae-Hyalosporae-Verticilliae.”

[Deuteromycetae]

DIPLODIOPSIS P. Hennings n. g. Sphaeropsidaceae. Hedwigia, 43:386. 3 Sept. 1904.

“Stromata superficialia, basi affixa, subcarbonacea, globosa; perithecia immersa; conidia oblonga, 1-septata atrofusca. Chaetodiplodiae et Botryodiplodiae affin. sed superficialia, haud setulosa.

“*D. tarapotensis* P. Henn. n. sp. . . .

“Die fast kugeligen, granuliert runzeligen, in der Mitte oft etwas genabelten oder niedergedrückten Stromata sind auf der Unterseite dem Blatte sehr leicht angeheftet und fallen bei Berührung leicht ab. Die Entstehung der Conidien konnte infolge der brüchig-kohligen Beschaffenheit der Stromata, welche mehrere Perithezien zu enthalten scheinen, nicht deutlich wahrgenommen werden. Viele Stromata sind völlig unreif. Höchst wahrscheinlich stellt der Pilz das Conidienstadium einer Dothideaceae dar. Zu Chaetopodia kann er wegen der fehlenden Borsten, zu Botryodiplodia etc. wegen des oberflächlichen Vorkommens nicht gezogen werden. (Hierzu Textfigur.)”

[Deuteromycetae]

DIPLOZYTHIA Bubak n. g. Sphaeropsidaceae. Ann. Mycolog. 2:399. Sept. 1904.

"Fruchtkörper fleischig, fast wachsartig, blutrot gefärbt, einzeln oder auf einem gemeinschaftlichen Subiculum, anfangs kugelig, später eingefallen und ziemlich weit geöffnet. Sporenträger strauchartig verästelt. Sporen zuletzt zweizellig, gebogen.

"*Diplozythia scolecospora* Bubak n. sp. . . .

"*Diplozythia scolecospora* n. ist vielleicht die Pycnidienform von *Ophionestria scolecospora* Bref. et Tav."

[Deuteromycetae]

EIDAMIA Lindau n. g. Aspergilleae, Hyphomycetes. Rabenhorst's Kryptogamen-Flora, 1⁸:123. 30 Juni 1904.

"Syn. *Papulaspora* Eidam (non Preuss) in Cohns Beitr. III, 414 (1883).

"Hyphen verzweigt, septiert, weiss. Konidienträger aufrecht, verzweigt, septiert, nach der Spitze verjüngt und dann zu einer kugligen Endblase aufgetrieben. Sterigmen auf der Blase radiär stehend, spitz. Konidien in Ketten, hyalin. Ausserdem noch Bulbillen an Seitenzweigen entstehend und an ähnlichen Trägern, wie die Konidien, einzellige Chlamydosporen von eirunder Gestalt und gelbrauner Farbe."

[Deuteromycetae]

EXOSPORINA Oudemans n. g. Tuberculariaceae. Koninklijke Akademie van Wetenschappen te Amsterdam. 1904, p. 501. (25 Feb. 1904.)

"Fungi expositi vel endogeni, stromate nullo vel parum evoluto, conidiis in catenas stipatas digestis, singulatim secedentibus, homomorphis, continuis, coloratis."

[Deuteromycetae]

GIULIA Fl. Tassi n. g. Leptostromaceae [printed as *Nematospora* Fl. Tassi but changed to *Giulia* on account of *Nematospora* Peglion.] Bullettino del Laboratorio ed Orto Botanico della R. Università di Siena, 6:92. 1904.

"Perithecia primitus velata, dein superficialia, elongata, subcarbonacea, atra, astoma, dimidiata; sporulae bacillares, continuae, hyalinae, apice setoloso-penicillatae."

[Deuteromycetae]

GLOIOSPHAERA v. Höhnelt n. g. Mucedineae. Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe, Wien, 111:998. 1902.

"Fungus saprophyticus, totus candidus; hyphis sterilibus parvis, repentibus, matrici adnatis; hyphis fertilibus sparsis, validis, erectis, septatis, asperulatis, apice acutis, inferne simplicibus, superne crebrius septatis denseque verticillatim ramosis, ramulis subtilibus, brevibus, strictis, furcatis, versus sporophori verticem brevioribus et simplicioribus, apice sterigmata complura, acuta gerentibus; conidiis e sterigmatim apice orientibus, non catenulatis, continuis, ellipsoideis, unacum capituli ramulis globulum mucosum, subconsistentem formantibus."

[Deuteromycetae]

HOLCOMYCES Lindau n. g. Leptostromataceae. Verhandlungen des Botanischen Vereins der Provinz Brandenburg, 1903, 45:155. Ausgegeben 20 Februar 1904.

"Fruchtkörper länglich, im Holz entstehend und dann zur Oberfläche hervorbrechend, mit Längsspalt unregelmässig sich öffnend, schwarz. Sterigmen einfach. Sporen ellipsoidisch, zweizellig, braunschwarz, Teilzellen gleich gross.

"Gehört zu den *Leptostromataceae*, Abteilung *Phaeodidymae* und unterscheidet sich von *Diplopeltis* scharf durch die Form der Fruchtkörper.

"H. exiguus Lindau nov. spec." . . .

[Deuteromycetae]

KABATIA Bubák n. g. Leptostromaceae. Oesterreichische Botanische Zeitschrift, 54:28. Jan. 1904.

"Pycniden halbiert, schildförmig, häutig, schwarz, mündungslos, unregelmässig aufreissend, von strahligem, dunkelbraunem Gewebe.

"Sporen stark sichelförmig gekrümmt, hyalin, zweizellig, ungleichseitig."

[Deuteromycetae]

MANGINIA Viala et Pacottet Sphaeropsideae. Comptes Rendus des Seances de l'Academie des Sciences, 139:88. 4 July 1904.

"Le parasite de l'Anthracnose *Sphaceloma ampelinum* de Bary n est connu que par la forme conidienne à basides, en stroma serré à la surface des rameaux ou des raisins verts, portant des conidies en bâtonnets, ovoïdes-cylindriques, avec deux points réfringents, de 3μ à 6μ longuer. Nous avons obtenu, dans nos cultures, cette forme conidienne à spores en bâtonnets, des spermogonies (avec spermaties identiques à ces conidies ou bâtonnets), des pycnides, des sclérotés qui donnent naissance à une autre forme conidienne à grosses spores, un mycélium très polymorphe qui sur les milieux sucrés, se fragmente et produit une forme levure. Toutes ces formes de fructification, par des cultures croisées sur milieux divers, se ramènent les unes aux autres; ensenencées sur les raisins verts, elles reproduisent les lésions et les chances caractéristiques de la maladie. Ces organes si variés de reproduction séparent le parasite de l'Anthracnose des Mélanconiées et le rattachent au groupe des Sphaeropsidées; nous le nommons *Manginia ampelina* en créant un nouveau genre dans lequel viendront sans doute se ranger les parasites causes des Anthracnoses des autres plantes, quand on les aura isolés et cultivés.

"Sur jus de feuilles gélöse, le développement est très rapide; le viole mycélien s'irradie autour du point primitif du semis et couvre en 5 ou 6 jours, sur une épaisseur de 1mm. à 3 mm., les boîtes de culture de 9 cm. de large et 25 cm. de long. . . .

"Quand on transporte le *M. ampelina*, par semis des précédentes cultures, sur haricot ou lait gélosé non acide, 2 ou 3 jours après, à 25°, les tubes ou les plaques sont criblés de très petits points d'un roux clair. Ce sont des conceptacles simples (diamètre: 112μ) ou composés et alors mamelonnés, portant une ou plusieurs ostioles (jusqu'à 12 et 15) circulaires et sessiles, et entourés d'une membrane pluricellulaire; ils renferment une grande quantité de petites spores en bâtonnets identiques aux conidies, et légèrement gris rosé vues en masse et de mêmes dimensions (3μ à 6μ); elles sont produites par des fines basides qui tapissent la paroi des conceptacles; elles germent de la même façon en ce renflant d'abord en leur centre et en poussant un ou deux tubes mycéliens. Nous considérons ces organes, les plus fréquents, comme des spermogonies avec spermaties. . . .

"Dans les milieux liquides, quand les cultures sont âgées, il se forme, dans l'épaisseur de la trame mycélienne boursouflée, des parties plus condensées. Ces nodosités sont de deux sortes: les unes sont des pycnides simples (350μ sur 325μ) à membrane épaisse et foncée en brun, à petites ostioles sessiles produisant, sur une couche serrée de basides qui tapissent les parois externes, des stylospores subovoïdes (longueur 5μ sur 30, diamètre au centre 3μ , 50) incolores, à membranes assez épaisses.

"D'autres nodosités des parties les plus anciennes de la plaque mycélienne, sont plus allongées (3μ , 50), plus étroites (98μ); ce sont des sclérotés rhizomorphiques, à fins tubes mycéliens agglomérés, incolores au centre, plus épais et bruns à la surface. De ces sclérotés poussant, à un moment, des branches simples cloisonnées hyalines; de leur sommet renflé se sépare bientôt une spore presque ronde ou à peine subovoïde (8μ sur 7μ), incolore, à protoplasma finement granuleux. C'est une deuxième forme de conidiophores différente de celle qui produit les conidies en bâtonnets.

"Quand les milieux de culture liquides ou même solides sont riches en matières sucrées, le mycélium, très variqueux, provenant de l'un quelconque des organes de reproduction précédents, se fragmente en nombreuses cellules et donne une forme levure (7μ , 50 et 6μ , sur 4μ , 50 et 4μ) qui se multiplie par bourgeonnement et produit de l'alcool; une ou plusieurs cellules filles proviennent de la cellule mère, qui est ovoïde, incolore, à protoplasma grumeux et à membrane très distincte. Vues en masse, sur plaques gélosées, par exemple, les cellules levures ont une coloration d'un gris brun sale, et forment des traînées épaisses et fluides. Transportées sur haricot gélosé sans sucre, dès parfois la première culture ou après plusieurs passages, ces formes levures redonnent des conceptacles spermogonies. Les formes levures des cultures anciennes et en milieux très sucrés forment deux (ou une) spores internes, à membrane propre dans la membrane commune de la cellule mère."

[Deuteromycetae]

NEMATOSPORA Fl. Tassi n. g. Leptosthomaceae, changed to *Giulia* on account of *Nematospora Peglion*. Cf. *Giulia*. *Bullettino del Laboratorio ed Orto Botanico della R. Università di Siena*, 6:92. 1904.

[Deuteromycetae]

ONCOPodium Sacc. n. g. *Annales Mycologici*, 2:19. Jan. 1904.

"Hyphae steriles brevissimae, h. e stratum proliferum tenuissimum formantes et basidia conidiophora immediate gignentes. Basidia laxa fasciculata, continua, filiforma, sub conidio conspicue vesiculoso-tumentia, hyalina, apice monospora. Conidia subglobosa, pluriseptato-clathrata, fuliginea, utrinque lateraliter (nec apice) in apiculum conicum subhyalinum producta. Ob basidia apice vesiculosa *Stemphylium inatum* in memoriam revocat, sed basidiis simplicibus, conidiis lateraliter apiculatis omnino differt. In systemate prope *Sporodesmium* locandum genus."

[Deuteromycetae]

PELTISTROMA P. Hennings n. g. Leptostromataceae. *Hedwigia*, 43:391. 3 Sept. 1904.

"Stromata superficialia rotundato-effusa, atro-membranacea, radiato-cellulosa; perithecia hemisphaerico-elevata, poro pertusa; conidia oblonga, continua, flavido-fusca.

"P. juruana P. Henn. n. sp.

"Jedenfalls Conidienstadium einer Microthyriacee, die schwarzen krustenförmigen Stromata, aus denen sich die Perithezien papillenartig hervorheben, überziehen meist die ganze Blattseite. Vielleicht zu *Asterina reptans* B. et C. gehörig. (Hierzu Textfigur.)"

[Deuteromycetae]

PHRAGMOPELTIS P. Hennings n. g. Leptostromataceae. *Hedwigia*, 43:392. 3 Sept. 1904.

"Stromata superficialia, membranacea, dimidiato-scutata, radiato-cellulosa, rugulosa, poro pertusa, atra; conidia oblonga, diutius hyalina continua, deinde 3-septata, atra.

"Ph. Siparunae P. Henn. n. sp.

"Ein höchst merkwürdiger Pilz, welcher zweifellos das Conidienstadium einer Microthyriacee darstellt. Die Conidien sind sehr lange völlig hyalin, ungeteilt, später gelbbraunlich, zuletzt braun-schwarz, 1- dann 3-septiert, an kurzen, farblosen Trägern entstehend. (Hierzu Textfigur.)"

[Deuteromycetae]

POROPELTIS P. Hennings n. g. Leptostromataceae. *Hedwigia*, 43:390. 3 Sept. 1904.

"Stromata superficialia pulvinata vel dimidiato-scutata, carbonacea subradiata, sulcata, oculis plurimis immersis deinde po-

roso vel subrimoso apertis; conidia subellipsoidea, fusca, continua.

"*P. Davillae* P. Henn. n. sp. . . .

"Dieses Conidienstadium gehört zweifellos einer *Hysteriacee*, aus der Verwandtschaft von *Parmularia* an. Die Stromata sind teilweise recht verschieden ausgebildet, dieselben zerfallen bei der Reife von oben und treten alsdann zerstreut stehende offene, meist rundliche Fächer hervor. Dieselben werden von einem Parasiten (*Paranectriella* spec.), der leider schlecht entwickelt ist, bewohnt, ausserdem tritt eine *Aschersonia* u. s. w. auf gleichem Blättern auf. (Hierzu Textfigur.)"

[*Deuteromycetae*]

PYCNOSTYSANUS Lindau n. g. *Hyphomycetae*. Verhandlungen des Botanischen Vereins der Provinz Brandenburg, 1903, 45:160. Ausgegeben 20 Feb. 1904.

"Coremien einfach, starr, aus längsverlaufenden Fäden gebildet. Köpfchen klein, fest. Sporen in Ketten gebildet, ungeteilt, ellipsoidisch, dunkel gefärbt."

[*Deuteromycetae*]

SEPTODOTHIDEOPSIS P. Hennings n. g. *Sphaeropsidaceae*. *Hedwigia*, 43:387. 3 Sept. 1904.

"Stromata superficialia, carbonacea, pulvinata, atra, rugosa, setulosa, perithecii immersis; conidiis filiformibus falcatis, hyalinis, pluriguttulatis vel obsolete septatis. *Cytosporinae* Sacc., *Septoriellae* Oud. aff., sed stromatibus superficialibus.

"*S. manaosensis* P. Henn. n. sp. . . .

"Die schwarzen Stromata treten herdenweise besonders auf der Blattunterseite auf, die meisten sind völlig unreif, nur in wenig im Innern blassen Perithezien wurden Conidien beobachtet, doch konnte wegen der kohlighruchigen Beschaffenheit des Stromas die Entstehung derselben nicht festgestellt werden. Jedenfalls stellt die Art eine Conidienform einer *Dothideacee* dar. (Hierzu Textfigur.)"

[*Deuteromycetae*]

SEYNESIOPSIS P. Hennings n. g. *Leptostromataceae*. *Hedwigia*, 43:392. 3 Sept. 1904.

"Stromata innato-superficialia, submembranaceo-crustacea atra, rotundato-discoidea; perithecia immersa, ostilota pertusa; conidia ovoidea 1-septata, atra.

"*S. rionegrensis* P. Henn. n. sp. . . .

"Ob dieser Pilz wirklich zu den *Leptostromataceen* gehört, ist mir sehr zweifelhaft, vielleicht würde derselbe besser in die Verwandtschaft von *Haplosporella* gehören, da die scheibenförmigen Stromata eingewachsen sind. Dieselben sind von den Conidien gänzlich erfüllt. Ausserlich hat derselbe mit *Seynesia* gewisse Ähnlichkeit, doch ist die Struktur nicht strahlig-zellig. (Hierzu Textfigur.)"

[Deuteromycetae]

SIROZYTHIA v. Höhnelt n. g. Nectroideaceae. *Annales Mycologici*, 2:48. Jan. 1904.

"Pycnidiis globosis vel oblongis, immerso-erumpentibus, carnosulis, pallidis vel hyalinis, primum clausis, demum irregulariter dehiscentibus, intus dense sporophoris brevibus obtectis. Conidiis acrogenis, catenulatis, hyalinis vel pallidis, continuis, plerumque oblongis."

[Deuteromycetae]

TRACYLLA (Sacc. ut subg.) Fl. Tassi n. g. Leptostromaceae. [Type, *Leptothyrium spartinae* Peck.] *Bullettino del Laboratorio ed Orto Botanico della R. Università di Siena* 5:80. 1902.

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NOTES FROM MYCOLOGICAL LITERATURE XIV.

W. A. KELLERMAN.

FUNGUS DISEASES OF FRUITS IN MICHIGAN, B. O. Longyear, Agr. Exp. Sta. Special Bulletin 25, March 1904, is intended to serve as a sort of a text book of the diseases most common and destructive to fruits in that State. The illustrations are abundant, very good, and mostly original. As a convenient little hand-book this bulletin can be highly commended.

IN THE BULLETIN DE LA SOCIÉTÉ MYCOLOGIQUE DE FRANCE, Tome XX, 3e Fascicule, 20 Jouillet 1904 we find the following topics: Barbier, Agaricinées de la Côte-d'Or; Patouillard,

Champignons nouveaux des îles Gambier; Molliard, *Forme conidienne de Sarcoscypha coccinea* (Jacq.) Cooke; Delacroix, Champignons parasites sur les Caféiers; Puttemans, Fumazine des Caféiers, and *Maladie du Caféier produite par le Stilbella flavida*; Maublanc et Lasnier, *Sur une Maladie des Cattleya*.

DR. FRANZ V. HOEHNEL publishes an interesting article, *Ueber Myxosporium tulasnei, Myxolibertella und Sporodiniopsis*, in the May No. of the *Annales Mycologici*, 1904. Among other things he remarks that Saccardo says sehr viele Arten der Section "Phomopsis" des Formgenus Phoma neben den Sporen noch fadenförmige, gekrümmte Basidien abgliedern; but that he is convinced that these also are *spores* zweite Ordnung in case of *Myxolibertella*; he also says that this genus belongs to Melanconiaceae and is no *Phomopsis* (Sphaeropsideae). We quote again: Dass Sphaeropsideen häufig zweierlei und selbst dreierlei Sporen zeigen, ist bekannt So ist Thatsache, dass *Trichoderma lignorum* zu mindestens zwei verschiedenen *Hypocrea*-Arten gehört, und zweifellos, dass die Formspecies *Oidium erysiphoides* Fr. sogar zu verschiedenen *Gattungen* der Erysipheen gehört. Ebenso kann man die *Cystospora*-Formen vieler *Valsa*-Arten einfach nicht von einander unterscheiden, obwohl es ja sicher ist, dass sie specifisch verschieden sein müssen.

ANNALES MYCOLOGICI, Vol. II, No. 3, Mai 1904, contains: Horn, Experimentelle Entwicklungsänderungen bei *Achlya polyandra* de Bary; Rick, Ueber einige neue und kritische Pilze Süd-Amerikas; Höhnel, Ueber *Myxosporium tulasnei*, *Myxolibertella* und *Sporodiniopsis*; Constantineanu, Sur deux nouvelles espèces d'Uredinées; Bubák, Die Fruchtschalen von *Sclerotinia alni* Maul; Salmon, On *Erysiphe graminis* DC. and its adaptive parasitism within the genus *Bromus*; Zahlbruckner, Neue Flechten; Höhnel, *Mycologische Fragmente*, 10.; also Neue Literatur, und Referate.

CRYPTOGAMAE FORMATIONUM COLORADENSIVM is the title furnished by Dr. Frederic E. Clements of the University of Nebraska, who plans to issue representative sets of Colorado cryptogams. The fungi will constitute the major part of the collection, though the mosses, liverworts and algae will be included. It is proposed to issue the collection, which will contain 600-800 numbers, in centuries, at the rate of one or two each year. The first century will be ready for distribution in the spring.

This collection is designed to be a contribution to the treatment of the cryptogams in the investigation of plant formations, and to supplement the *Herbaria Formationum Coloradensium*. The species will be arranged in the various formations with respect to position and abundance, though they may be distributed of course in the ordinary taxonomic herbarium. Group and portrait

prints of the most important species will average twenty to the century. For mycologists who wish them, water color copies of original drawings will be furnished of the fleshy fungi at the rate of ten cents per copy. The labels will be printed in Latin, and will be as full as possible. The price of the collection will be twelve dollars per century.

FROM THE BUCHHANDLUNG UND DRUCKEREI of E. J. Brills, Leiden, has been recently (1904) issued *Icones Fungorum Javanicorum* von O. Penzig und P. A. Saccardo. The text occupies 124 pages and the lithographic plates are 80 in number. All the new species, and new genera are included that were published by these authors in *Malpighia* (1897-1902), three articles entitled "Diagnoses fungorum novorum in insula Java collectorum." The authors well say: Da auch überhaupt, im Vergleich zu der ungeheueren Anzahl der bisher bekannten Micromyceten nur verhältnissmässig wenige Formen derselben durch Habitusbilder und Wiedergabe der mikroskopischen Charaktere illustriert sind, so wird vielleicht die Abbildung aller jener neuen javanischen Pilze, die eine grosse Menge von Gattungen und Familien repräsentieren, nicht unwillkommen sein. The work can not be too highly praised nor its usefulness overestimated.

IN *ATTI DELL' ISTITUTO BOTANICO DELL' UNIVERSITA DI PAVIA*, Volume Ottavo, 1904, the following mycological articles appear: *Uredo Aurantiaca* n. sp., nuova uredinea parassita delle Orchidee, nota del Dott. Luigi Montemartini; *Intorno ad nuovo tipo di Licheni a tallo conidifero che vivono sulla vite finora ritenuti per funghi*, *Ricerche di G. Briosi e R. Farneti*; *Contribuzione allo studio della Micologia Ligustica pel Dott. Angelo Magnaghi*.

IN *DOTT. ANGELO MAGNAGHI'S CONTRIBUZIONE ALLO STUDIO DELLA MICOLOGIA LIGUSTICA* (*Atti Ist. Bot. Univ. Pavia*, 8:121-133, 1904) we find the descriptions of many new species of fungi, the hosts in many cases being cultivated in our greenhouses; for example: *Macrophoma ligusticum* Magn. in ramis emortuis *Hydrangea hortensis*; *Macrophoma helicinum* Magn. in foliis dejectis and *Hederae helices*; *Cytospora citri* Magn. in ramis emortuis *Citri aurantii*; *Sphaeropsis magnoliae* Magn. in foliis vivis *Magnoliae grandiflorae*; *Aschochyta cliviae* Magn. in foliis vivis *Cliviae nobilis*; *Gloeosporium begoniae* Magn. in foliis vivis *Begoniae* sp.; *Colletotrichum pollaccii* Magn. in foliis vivis *Aucubae japonicae*.

A LICHEN SOCIETY ON SANDSTONE RIPRAP is discussed by Bruce Fink in the *Botanical Gazette*, 38:265-284. The subheads are: Description of the Riprap, Ecologic Factors, Composition of the Lichen Society, Types of Thalli represented, Varying Ecologic Conditions and Distribution, Origin of the Society, Com-

parisons with other Similar Societies, Conclusion. The author says the facts show clearly some very evident adaptations in Lichen thalli.

DR. G. P. CLINTON HAS PUBLISHED AN EXHAUSTIVE MONOGRAPH ON THE NORTH AMERICAN USTILAGINEAE, *Proceedings of the Boston Society of Natural History*, Vol. 31, No. 9, p. 329-529, October, 1904. This is based on his study of this group for several years under exceptionable advantages. He gives keys to the genera, full synonymy, cities exsiccata, names hosts and indicates distribution by States. All descriptions are newly written; there are included also a list of host-plants alphabetical under Families, Distribution of Species by Continents, Literature (203 items), Index to Synonyms, and Types are cited. Several species are reduced to synonyms besides those given in the preliminary paper (in *Jour. Mycol.*); a dozen additional species are included besides another dozen of *New Species*. Illustration of all North American species by spore drawings we are told is under consideration.

THE SEPTEMBER NO. OF THE JOURNAL OF MYCOLOGY (1904) contained the following: Benjamin Matlack Everhart — Obituary; Morgan — *Pyrenomycetes Scarcely Known in North America*; Holway — Notes on *Uredineae*, III; Fairman — Some New Fungi from Western New York; Ellis and Kellerman — A New *Phyllachora* from Mexico; Kellerman and Ricker — New Genera Published Since 1900; Kellerman — Index to North American Mycology, Notes from Mycological Literature, XII.

IN DRITTER BEITRAG ZUR PILZFLORA VON TIROL von Fr. Bubák und J. E. Kabát, published in *Oesterreichische Botanische Zeitschrift* (the last installment in Mai 1904), many new species are described, also one new genus, namely, *Colletotrichopsis*. It differs from *Colletotrichum* durch die Lage der Borsten, die hier als eine Pyknidenwand fungieren.

P. HENNINGS DESCRIBES SEVERAL NEW SPECIES in *Hedwigia*, 43:147-9, 16 Mai 1904, under the title *Einige neue Pilze aus Costarica und Paraguay*. Of special interest we note his new species of a Rust on the potato, no uredineous species being hitherto reported on this host. The parasite in question is given as follows: *Puccinia Pittieriana* P. Henn. n. sp., auf lebenden Blättern von *Solanum tuberosum* L.

PROFESSOR B. M. DUGGAR PUBLISHES AS THE FIRST REPORT ON HIS EXTENDED STUDIES OF *AGARICUS CAMPESTRIS*, *Farmers' Bulletin* No. 204 (1904) on the Cultivation of Mushrooms. The description of the plant is followed by notes on Spores and Spawn, Commercial Mushroom Growing, Mushroom Enemies, etc. He points out the necessity of getting so-called virgin spawn which has never exhausted itself by the production of Mushrooms. It is now possible by means of chemical stimulation to germinate

the spores in quantity under "pure-culture" conditions. It is confidently expected that investigations in the course of another year will put it within the reach of any practical and experienced grower to develop spawn from spores of selected Mushrooms. By such methods one could select the particular Mushrooms from which spores are to be taken, and therefore constant selection and improvement will become possible. Success has also attended the effort to grow "spawn" from bits of tissue of selected Mushrooms in test tubes filled with sterilized stable manure or compost.

THE RELATIONSHIP OF SEXUAL ORGANS IN PLANTS by Bradley Moore Davis (*Botanical Gazette*, 38:241-264, 1904), though not primarily taxonomic and mycological, is an article that every mycologist will desire to consult. The morphologist chiefly will be interested in the new terms used: Sporocyst, Gametocyst, Spermatocyst, Oocyst, Gametangia, Spermatangia (antheridia), Ooangia (archegonia), Coenogametes.

OOGENESIS AND FERTILIZATION IN ALBUGO IPOMOEAE-PANDURATAE, studies by F. L. Stevens, is published in the October No. (1904) of the *Botanical Gazette*. It is a brief account, illustrated with two text-figures, touching only the salient features and those which present divergence from the usual types. The sexual organs and sexual spores are found in the hypertrophied parts of the host in such abundance as to render this species the most favorable of all of the genus for the study of Oogenesis and fertilization.

A PREVISIONAL LIST OF THE FUNGI OF NOVA SCOTIA is published by A. H. MacKay, in the proceedings and Transactions of the Nova Scotian Institute of Science, Vol. XI, part I, pp. 122-143, 1904. Most of the species are the higher fungi; one is doubtfully proposed as new, namely, *Boletus dartmouthi*.

THE GROWTH OF *RAMULARIA RETICULATA* is recorded by Albert C. Herre in the *Botanical Gazette* for September, 1904. He finds that near the Stanford University, California, various measurements show a growth of 17 to 91 per cent. in length from September to the following May. A single measurement showed that *Parmelia caperata*, growing on the trunk of *Aesculus californicus*, in the same time increased 1.5 cm. in longitudinal diameter, and 1.0 cm. in transverse diameter.

A NOTE IN SCIENCE, June 3, 1904, by Albert Francis Blakeslee, pertains to a somewhat extended investigation on the method of reproduction in one group of the common Moulds. Some of the facts are stated as at variance with the conclusions of other investigators. Zygosporangium production (the author states) in the Mucurineae is conditioned by the inherent nature of the individual species and only secondarily or not at all by external factors. He

designates the species as *homothallic* and *heterothallic*, corresponding to monoecious and dioecious forms among the higher plants. Quoting again: In all species of both homo- and heterothallic groups the process of conjugation has been carefully followed, the swollen portions (*progametes*) from which the gametes are cut off do not grow toward each other, as currently believed, but arise as a result of the stimulus of contact between more or less differentiated hyphae (*zygophores*) and are from the outset always normally united.

THE SPHERE OF BACTERIOLOGY was the subject of a paper by Professor Edwin Oakes Jordan before the Section of Bacteriology, International Congress of Arts and Science, Universal Exposition, St. Louis, published in *Science*, Nov. 18, 1904. The interesting and instructive address closes with these words: It is not possible to estimate the loss to literature, science and art since the dawn of intellectual life which must be laid at the door of the infectious diseases. The relations of bacteriology to public hygiene, if properly appreciated and cultivated, will lead to an improvement in the conditions of life which will enhance both the ideal and material welfare of the race and will give greater assurance that each man shall complete his span of life and be able to do the work that is in him.

THE MYCOLOGICAL ARTICLES IN HEDWIGIA, Band 43, Heft 6, (3 Sept. 1904) are as follows: P. Hennings, *Fungi amazonici* III. a cl. Ernesto Ule collecti (Schluss); M. Britzelmayr, Ueber Cladonien-Abbildungen; Fr. Bubák und J. E. Kabát, *Mykologische Beiträge* II; J. B. Traverso, Eine neue *Cercospora*-Art (*S. compacta* Trav.); P. Hennings, *Cudoniella Mildbraedii* P. Henn. n. sp.; P. Hennings, Einige von Herrn G. Feurich, Göda, im Königreich Sachsen gesammelte *Sphaeropsidaceen*; P. Hennings, *Doassansia Renkaufii* P. Henn. n. sp. auf *Hydrocharis morsus ranae* L.

IN THE CONCLUDING PORTION OF "FUNGI AMAZONICI III. a cl. Ernesto Ule collecti" by P. Hennings [*Hedwigia*, 43:353-399, 3 Sept. 1904], the following new genera are described: *Saccardomyces* (*Englerulaceae* n. fam. *Ascomycetae*); *Perisporina* and *Zukaliopsis* (*Perisporiaceae*); *Asteropeltis* and *Phaeoscutella* (*Microthyriaceae*); *Metadothella* (*Pseudophacidiaceae*); *Cinnobella*, *Diplodiopsis*, and *Septodothidiopsis* (*Sphaeropsidiaceae*); *poropeltis*, *Peltistroma*, *Seynesiopsis*, and *Phragmopeltis* (*Lep-tostromataceae*); and *Bactridiopsis* (*Tuberculariaceae*).

IN HEDWIGIA, BAND 43, HEFT 3 [16 Mai 1904], we find the following articles on fungi: P. Hennings, Einige neue Pilze aus Japan (Schluss); P. Hennings, Einige neue Pilze aus Costarica und Paraguay; P. Hennings, Einige neue Pilze aus Japan II; P. Hennings, *Fungi amazonici* I. a cl. Ernesto Ule collecti;

P. Hennings, *Fungi australiensis* II; Fr. Bubák, Eine neue Agaricaceen-Gattung aus Böhmen; P. Hennings, *Fungi S. Paulenses* III. a cl. Puttemans collecti (Anfang).

NEW GENERA OF FUNGI here given are published in Hedwigia, Band 43, Heft 4, (12 Juni 1904): *Hypoxylonopsis* P. Henn. n. (Dothideaceae); *Parmulariella* P. Henn. n. g. (Hysteriaceae); *Uleopeltis* P. Henn. n. g. (Hysteriaceae); *Rehmiomyces* P. Henn. n. g. (Bulgariaceae); *Atractina* v. Höhnelt n. g. (Hyphomycetaceae); *Ioracterium* E. Jahn n. g. (Myxomycetaceae).

A NEW SPECIES OF POLYPORUS FROM TENNESSEE, namely, *P. arculariformis* Murrill, is described and figured by William A. Murrill, in *Torrey* 4:150-1, Oct. 1904. It is a small plant near *P. arcularius* (Batsch.) Fr.

FECUNDATION IN PLANTS, DAVID M. MOTTIER, a book of 187 pages, has been issued by the Carnegie Institute of Washington, Publication No. 15. Many fungi are illustrated from this point of view, the whole article presenting the subject of fecundation in the vegetable kingdom by the discussion of concrete cases, selected from the great groups of plants certain typical representatives in which the sexual process seems to have been most thoroughly investigated. The sexual process is called throughout the work *fecundation*, not fertilization.

B. O. LONGYEAR'S PRELIMINARY LIST of the Saprophytic fleshy Fungi known to occur in Michigan, Rep. Mich. Acad. Sci. (1902), 4:113-124, 1904, contains 486 names. Notes on habitat, abundance, date of occurrence, etc., are given, but no descriptions except of the Michigan new species published in previous Reports.

IN THE OCTOBER NO. OF THE TORREY BULLETIN (1904) Julia T. Emerson publishes under the title, Relationships of *Macrophoma* and *Diplodia*, her proof of the identity of a *Macrophoma* (*Sphaeropsis palmarum* Cke.) with *Diplodia epicocos*—"there certainly seems to be no doubt that the unicellular white *Macrophoma* spores in the pycnidia are simply the immature forerunners of the mature *Diplodia* spores." The material for the cultures (on agar, potato, bread and milk, bread and water, and pith and blade of cocoanut leaf) was obtained in Jamaica, from various collections of cocoanut affected with diseases.

IN VOLUME XII (May-October, 1904), of the Centralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten, we find the following mycological articles of scientific interest: Botanische Beschreibung einiger sporenbildenden Bakterien, Ernst Neide; Anhäufungsversuche mit denitrifizierenden Bakterien, G. van Iterson, Jr.; Bakteriologische Untersuchung ueber *Bacillus*

oleae (Arc.), Ruggero Schiff; Betrachtungen ueber die Verteilung der Uredineen auf ihren Nährpflanzen, P. Dietel; Contribution a l'étude de *Cystopus candidus* Lév., Albert Eberhardt; Zur Morphologie einer neuen *Cystospora*, R. Laubert; Infektionsversuche mit einigen Uredineen, II Bericht (1903), Fr. Bubák; Grundlinien zur Systematik der Saccharomyceten, Emil Chr. Hansen; Einige Beobachtungen über die Struktur und Sporenbildung bei Symbiotischen Bakterien, Em. Menel; Die Bakterienflora gesunder samen und daraus gezogenen Keimpflanzchen, Max Duggeli; Zur Kenntnis der Erbllichkeit bei den einzelligen Organismen'; Die Verzweigung und Mycelbildung bei einer Bakterie (*Bacillus berestnewi* n. sp.), W. W. Lepeschkin; Beiträge zur Kenntnis der Eisenbakterien, B. Schorler.

THE MYCOLOGICAL ARTICLES OF TAXONOMIC INTEREST or of other character than purely economic, printed in *Centralblatt für Bakteriologie, Parasitenkunde u. Infektionskrankheiten*, Zweite Abteilung, Bd. XI, Sept. 1903-Mai 1904, are as follows: Ueber den Zusammenhang zwischen Pleospora und Helminthosporium-Arten, II, H. Diedicke; Versuche mit heterocischen Rostpilzen, W. Tranzschel; Studien ueber die Mikroorganismen des schwedischen Güterkäses, Gerda Troili-Peterson; Zur Kenntnis der Ueberwinterung des *Oidium Tuckeri*, Dr. Appel; Ueber den Gehalt der frisch gemolkenen Milch an Bakterien, Arthur Lux; On the discovery of cilia in the genus *Bacterium*, David Ellis; Die Ascosporen des *Aspergillus fumigatus*, G. Grijns; Kritische Studien ueber die Knöllchenbakterien, H. Süchting; A comparative and experimental study of bacilli producing red pigment, Mary Hefferan; Ueber den Kern der Bakterien und seine Teilung, F. Vejdovsky; Ueber einige in Kamerun auf *Theobroma cacao* beobachtete Pilze, Otto Appel und H. F. Strunk; Beiträge zur Kenntnis der Papilionaceen bewohnenden *Uromyces*-Arten, Ernst Jordi.

ANNALES MYCOLOGICI, VOL. II, No. 6, November, 1904, contains the following: Recherches morphologiques et Morphogéniques sur la membrane des Zygosporées, par le Professeur Paul Vuillemin; New or Interesting California Fungi II, by Edward Bingham Copeland; Neue oder seltene Pilze aus Thüringen, von H. Diedicke; Rehm, *Ascomycetes* exs. fasc. 33; Revision der Gattungen *Trybliella* *Rhydictsterium* *Tryblidana* *Tryblidium* *Tryblidiopsis*, von Dr. H. Rehm; Sydow, *Mycotheca germanica* Fasc. V-VI (No. 201-300); Bemerkungen ueber *Uredosporium* von *Uromyces brevipes* und *Uromyces punctato-straiatus*, von P. Dietel; *Notulae mycologicae*, A. Trotter; Neue Litteratur; Referate und kritische Besprechungen; Exsiccata. Six lithographic plates are used.

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EDITOR'S NOTES.

The belated appearance of this number is much regretted, but was unavoidable by reason of the editor's late return from a winter trip to Guatemala and the many college duties that were imperative during the few weeks past. Though no excuse for this tardiness — it is a pleasure to state that many parasitic species from that mycologically unexplored region were taken in; it is predicted that a critical study of this material during the summer will reveal the presence of many very interesting species. It is safe to say now that only a few of the forms are those that are common in the United States.

In this No. we print the First Supplement to the New Genera of Fungi published since 1900 — giving, as in the first installment of this compilation, an exact transcript of the original description of each genus and the full citation; the arrangement is also the same — alphabetical under the main Groups of Fungi. It is believed that this series in the very near future will prove of great advantage to working mycologists. The Supplement as well as the first installment is reprinted on *one side of page only* — so that a card Index can be readily prepared by cutting up the reprint. Mycologists appreciate the advantage of this — and I would also call the attention of librarians to this, particularly those who are in charge of large Public Libraries and College Libraries.

An Index to be of the greatest value should be kept up to date — and therefore *guilty* is the pleading if one asks as to the Index to North American Mycology. But it will be resumed at the earliest possible moment and then an attempt made to avoid so great laggardness in the future.

The assembling of delegates at Vienna soon to deliberate over botanical matters too numerous to mention, will it is hoped (?) lead to reformation in many directions — mycological, typographical, etc.

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